

Question Bank

Guru Nanak College, Budhlada

Department of Food Processing

Class - B. Voc. 2nd (Sem- 4th)

Subject: - Fruits and Vegetable Processing

Long Answer type questions

1. Explain post-harvest changes in fruits and vegetables.
2. Explain: Ventilated and controlled atmosphere storage.
3. Explain low temperature storage.
4. What are the quality standards and quality control measures for fruits and vegetables
5. What is canning. Explain basic requirements and process in detail
6. Explain machinery and its operation required in dehydration of fruits and vegetables
7. Explain briefly jam processing.
8. Explain briefly jelly processing.
9. Explain MAP and CAP.
10. Explain principle and processing techniques of potato chips.

Short Answer type questions (Write short note on)

- I. Jelly
- II. TSS
- III. Chemical composition of fruits and vegetables
- IV. Pickling

- V. Preservation
- VI. Dehydration
- VII. Flow chart of fruit juices
- VIII. Canning
- IX. Jam
- X. MAP
- XI. CAP
- XII. FSSAI
- XIII. Plant layout
- XIV. TSS of jam, jelly Squashes
- XV. Refractometer
- XVI. Potato Chips
- XVII. Tomato Paste
- XVIII. Sun drying
- XIX. Air drying
- XX. Kiln drier
- XXI. Spray drying and drum drying
- XXII. Advantages of canning
- XXIII. FPO
- XXIV. Fruits and Vegetables
- XXV. Any three tomato products

Question Bank

Guru Nanak College, Budhlada

Department of Food Processing

Class - B. Voc. 3rd (Sem- 5th)

Subject: - Food Industry Waste Management

Long Answer type Questions

1. Discuss different parameters used for classification and characterization of waste from fruit and vegetable processing industry.
2. Compare the properties of different waste released by sugar and dairy industry?
3. Explain the following treatment methods of liquid waste:
 - a) Trickling filter
 - b) Activated sludge process
4. Write a detailed note on the biogas plant with respect to composition of biogas, with suitable diagram along with advantages and disadvantages.
5. Discuss the process of vermi-composting used for treatment of food and agriculture waste along with its Economic importance?
6. Explain the following in detail:
 - a) Incineration
 - b) Landfill Digester
7. Explain biological composting in detail along with advantages and disadvantages.
8. Discuss the principle and working of Ion-exchange method.
9. Explain utilization from rice mill.

10. Explain thermal and biotechnological uses of rice husk.
11. Explain pyrolysis and gasification of rice.
12. Explain the following in detail:
 - a) Ion Exchange Method
 - b) Rotating Biological Contactors
13. Explain the following terms:
 - a) USAB
 - b) Vermicomposting
14. Discuss different parameters used for classification and characterization of waste from baking industry.
15. Discuss different parameters used for classification and characterization of waste from meat fish and poultry industry.

Short answer type questions (Explain the following terms)

1. Enlist various solid and liquid waste treatment methods.
2. COD
3. BOD
4. Explain in brief about landfill digester
5. Ion Exchange treatment for waste water.
6. Enlist various wastes from sugar industry.
7. Enlist various waste from dairy industry
8. Waste
9. Waste Management
10. TDS of waste water

11. USAB
12. Activated Sludge Process
13. Flow chart of citric acid production from fruit waste
14. RBC
15. Biofilters
16. Trickling filters
17. Vermicomposting
18. Composting
19. Ion Exchange method
20. Landfill Digester
21. Bio clarifiers
22. Utilization of rice bran
23. Economical aspects of waste treatment and disposal.
24. Enlist various waste from meat and poultry industry
25. Enlist any three waste from baking industry

Question Bank

Guru Nanak College, Budhlada

Department of Food Processing

Class - B. Voc. 1st (Sem- 1st)

Subject: - Documentation in Food Processing

Long Answer type questions

1. How is documentation for raw materials to finished products done in food industry?
2. How are raw materials inspected in food industries? Elaborate the concept of FIFO- First in, first out for raw materials.
3. Draw a process flow chart for milk plant, starting from receiving of raw materials to storage and dispatch of finished products.
4. Write down the application of computer in fruit and vegetable industry.
5. Describe implementation of ERP and its application in food industry.
6. Give the various reasons required for inspection of raw materials in a food industry. What are the tools required for the inspection?
7. Describe label details on finished food products.
8. Give brief introduction of ERP. What are the essentials guidelines of ERP in food processing industries?
9. Explain documentation of raw material in detail.
10. Explain documentation of raw material to finished product in detail.
11. Explain documentation of finished product in detail.
12. What is ERP? How it is implemented in food processing industry.

13. Describe implementation of ERP and its application in baking industry.
14. Explain documentation of finished product after dispatching from the industry.
15. Familiarization with the application of computer in some common food industries.

Short answer type questions (Explain the following terms)

1. Documentation
2. ERP
3. Process Flow chart for fruit and vegetable industry
4. Batch number
5. Computer application in food industry
6. Standard Deviation
7. Mean
8. Median
9. Mode
10. Raw material
11. Tertiary packaging
12. Statistical tools
13. Records
14. Label Details
15. Information panel
16. Primary Packaging
17. Secondary packing material
18. Documentation of finished product
19. Documentation of raw material

20. Record keeping
21. Standard Deviation
22. Importance of computer applications in food industry
23. Labelling of finished products
24. Compare documents and records
25. Any two guidelines of ERP

Question Bank

Guru Nanak College, Budhlada

Department of Food Processing

Class - B. Voc. 1st(Sem- 1st)

Subject: - Basics of Food Processing

Long Answer type questions

1. Define Food Processing. What are the objectives, need and scope of food processing in India?
2. Write the detailed note on the following terms:
 - a) Milling
 - b) Frying
 - c) Steaming
3. Discuss any three methods of food preservation by heat?
4. What are Ultra violet and ionizing radiations? Describe their role in food processing industry?
5. Explain chemical preservation of food. Explain the different types of chemical preservatives used for food preservation used for food preservation
6. Differentiate the following:
 - i. Reverse Osmosis
 - ii. Ultrafiltration
 - iii. Curing and Smoking
7. Describe the following:
 - i. High Pressure Processing and its application in food processing.
 - ii. Pulse Electric Field and its applications in food processing.
8. Describe the following:
 - i. Electrodialysis and its application in food processing.
 - ii. Microwave processing and its applications in food processing.
9. Use of chemical preservatives, safety in use and certification levels
10. Write the detailed note on the following terms:

- a) Refining
 - b) Stewing
 - c) Boiling
11. Write the detailed note on the following terms:
- a) Steaming
 - b) Fermentation
12. Explain pasteurization and sterilization in detail.
13. Explain food preservation by fermentation.
14. Explain any two methods of food preservation by low temperature.
15. Write the detailed note on the following terms:
- a) Roasting
 - b) Baking
 - c) Pickling

Shortanswer type questions(Explain the following terms)

- 1. Thawing
- 2. Roasting
- 3. Fermentation
- 4. Appertization
- 5. Baking
- 6. Drying and Dehydration
- 7. Pasteurization
- 8. Ohmic Heating
- 9. Disadvantages of Frying
- 10. Super Critical Fluid Extraction
- 11. Pickling
- 12. Blanching
- 13. Extrusion
- 14. Refrigeration
- 15. Thawing
- 16. Milling
- 17. Refining

18. Steam under pressure
19. Air drying
20. Sun drying
21. Freeze drying
22. Sterilization
23. Boiling
24. Parboiling
25. Smoking

Question Bank

Guru Nanak College, Budhlada

Department of Food Processing

Class - B. Voc. 2nd (Sem- 3rd)

Subject: - Introduction to Cereal and Legume Processing

Long Answer type questions

1. Explain the structure & composition of wheat.
2. Describe following terms:
 - i. Rice Bran oil
 - ii. Improvers used in flour
3. Discuss in detail wheat flour milling.
4. Explain the preparation and milling of paddy.
5. Define pulses and discuss chemical composition of mash, gram beans, moong.
6. Explain the working of machinery and equipments employed in milling industry
7. Discuss different processing of legumes:
 - i. Sun drying and precleaning
 - ii. Dehusking and splitting
8. Explain pulses flour products and their applications.
9. Explain extraction rate and milling systems in detail.
10. Explain pre-treatments of pulse milling in detail.
11. Explain different types of pulses and their milling specifications.
12. Explain flour products and their applications.

13. Explain the following:

- i. Structure and chemical composition of pulses.
- ii. Working principle and machineries employed in pulse milling.

14. Milling and preparation of paddy.

15. Structure and chemical composition of rice in detail.

Shortanswer type questions(Explain the following terms)

1. Grinding of split pulses
2. Conditioning
3. Name any five cereal grains
4. Parboiling
5. Merits of traditional milling
6. Explain Pretreatments given to pulses
7. Milling system
8. Equipments used in wheat flour milling
9. Milling
10. Composition of pulses
11. Various legume products
12. Rice bran oil
13. Botanical name of wheat and rice
14. Define structure of mash
15. Extraction rate
16. Parboiling of rice

17. Drying of legumes
18. Grinding of split pulses
19. Pulse flour products and their applications.
20. Improvers and bleaching used in flour
21. Composition of pulses
22. Oil application in pulse milling
23. Milling
24. Principle of wheat milling
25. Principle of rice milling

Question Bank

Guru Nanak College, Budhlada

Department of Food Processing

Class - B. Voc. 1st (Sem- 1st)

Subject: - Dairy Processing

Long Answer type questions

1 Explain the process for producing dairy products;

a) Ghee

b) Ice cream

2 Explain the following methods of milk processing

a) Sterilization

b) Homogenization

3 Discuss chemical composition and microbiology of milk

4 Describe the following terms in detail: a)cream separator b) fermented milk

5 Write a short note on preparation method and principle of yoghurt and paneer.

6 Describe form fill seal machine and spray drier.

7 Explain the role and responsibilities of dairy product processor in a dairy processing plant.

8 What is difference methods of cleaning and sanitization of dairy equipments and define biofilms.

Short answer type questions

1 Pasteurization

2 Difference between cheese and paneer

3 Gerber centrifuge

4 Toned milks

5 Infant milk

6 Write down the name of evaporators used in dairy industry

7 Bio detergents

8 Define methods of clarification

9 kalakand

10 Cheese making machine

11 Mechanism of fouling

12 Draw flow chart of Lassi processing

13 Flavoured drinks

14 Define milk

15 Plate heat exchanger



GURU NANAK COLLEGE BUDHLADA

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NAAC ACCREDITED "A++" GRADE

Guru Nanak College Budhlada

Department of Library and Information Science

Question bank

FOUNDATIONS OF LIBRARY AND INFORMATION SCIENCE

SECTION-A

1. Define Library. Describe the role of Libraries in changing Society.
2. Discuss the importance and implication of 2nd law of library and Information Science.
3. Define Public library. Describe the functions of a Public Library.
4. What do you understand by Resource Sharing? Describe the possible areas of Resource sharing in India.
5. Describe the changing role of library in Socio-economic development.
6. Enumerate Five Fundamental Laws of Library and Information Science. Discuss the implication of 5th law in detail.
7. Define Special Library. Describe the functions of a Special Library.
8. Define Library Cooperation and discuss its Levels.

SECTION-B

9. Describe the Library Legislation. Discuss its need for the growth and development of Libraries.
10. What is the role of RRRLF in the development of public libraries in India.
11. Describe Library Profession and its ethics in detail.
12. Describe the role and activities of Indian Association of Special Libraries and Information Centers (IASLIC).
13. Describe the need and purposes of Library Legislation.
14. What is the role and activities of UNESCO in promoting and developing Libraries?
15. Define Library Profession. Explain 'Library Professional Ethics in detail.
16. Describe the role and activities of Indian Library Association (ILA).

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SECTION- C

I. Write short notes on the following:

1. ALA
2. Virtual Library
3. Library Cess
4. Library Consortia
5. Copyright Act
6. Public Library
7. IFLA
8. UNESCO
9. Hybrid Library
10. Library Automation
11. Extension Service
12. IASLIC
13. Digital Library
14. Resource Sharing
15. Copyright Act
16. Open Access
17. Special Library
18. IFLA
19. RRRLF
20. Library Networking
21. Extension Services
22. Public Libraries

INFORMATION AND COMMUNICATION TECHNOLOGY: APPLICATIONS

- I. Define Automation. Discuss the planning and implementation.
- II. Describe the automation of circulation section in a library.
- III. Discuss the essential features of LIBSYS Library Software in detail.
- IV. Describe various types of Library Databases.
- V. Describe the automation of housekeeping operations in cataloguing section in a library.
- VI. Discuss the essential features of SOUL (Software for University Libraries) in detail.
- VII. What do you understand by the term 'Database'? Explain the bibliographic databases in detail.

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SECTION-B

- VIII. Define Virtual library. Discuss the objectives and importance of a Virtual Library.
- IX. Describe the activities and services of DELNET in detail.
- X. Describe the activities and services of ERNET in detail.
- XI. Define Internet-based resources and Services. Discuss the major internet-based resources and services.
- XII. Define Digital library. Discuss the objectives and importance of a digital Library.
- XIII. Describe the activities and services of WINISIS in detail.
- XIV. Describe the activities and services of NICNET in detail.

SECTION- C

- XV. Write short notes on the followings:

- 1. Digital Library
- 2. Discussion List
- 3. Hypermedia
- 4. WWW
- 5. WAN
- 6. Hybrid library
- 7. INFLIBNET
- 8. E-Mail
- 9. Internet
- 10. HTTP
- 11. Web-OPAC
- 12. Hybrid Library
- 13. Web-OPAC
- 14. Search engine
- 15. Gateways
- 16. Discussion List
- 17. MAN
- 18. Virtual library
- 19. INFLIBNET
- 20. Multimedia
- 21. Intranet
- 22. Hypermedia

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SCHOOL LIBRARY SYSTEM

SECTION-A

1. Define a School Library. Explain its need, purposes and Importance.
2. Describe different Printed Resources for the users in a School Library.
3. Discuss different types of Users and their Needs in a School Library.
4. Write an essay on Technical Processing of Collection in a School Library
5. Describe the various Information Sources used in a School Library.
6. Explain the information Sources used in a School Library users.

SECTION-B

7. Describe the different types of Information Services provided in a School Library.
8. Explain the Role of UNESCO in the development of School Libraries?
9. Define Information Service. Explain different Information Services provided in a School Library.
10. Explain the Recommendations given by different Commissions and Committees to promote School Libraries in India.
11. Discuss the Role of IFLA in the development of School Libraries.
12. Explain the Role of a Librarian in promoting the use of a School Library?

SECTION- C

I. Write short notes on the following:

1. Selection of Books in a School Library
2. Digital Resources
3. Define Library Classification
4. Shelving of Books
5. Weeding out of Books
6. Objectives of a School Library
7. School Library Committee
8. IFLA
9. Role of School Library
10. Stock Verification
11. Define Cataloguing
12. Inter Library Loan Service
13. Components of a School Library
14. Reference service
15. School library Committee
16. Procedure of Selection of books in a School Library
17. UNESCO
18. Weeding out of books
19. Stock Verification
20. Technical Processing of Library Collection

Head
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Guru Nanak College, Budhlada (Mansa)

Guru Nanak College Budhlada

Department of Mathematics

Class- M.Sc. Mathematics II

Subject- Differentiable Manifolds

Question Bank

Short Answer type Questions

1. Define Topological Manifold.
2. Define orientable Manifold.
3. Define germs of a function.
4. Tangent Vector and tangent Space.
5. Prove that Lie bracket is a vector field.
6. Define Difference Tensor.
7. State Properties of Torsion Tensor.
8. State Properties of Curvature Tensor.
9. Define Exterior differentiation.
10. Define contraction.
11. State Christoffel symbols of 1st and 2nd kind.
12. What do you mean by sectional curvature.
13. Show that XY defined by $XY(f)=X(Yf)$ is not a vector field.
14. Define Jacobian of a map.
15. Define rank of a map.

Long Answer type Questions

1. Prove that S^n is n dimensional analytic manifold.
2. If M is a manifold of dimension n then the tangent space $T_m(M)$ is also of dimension n .
3. Explain lie Bracket with its properties.
4. Define Exterior differentiation and its properties.
5. Show that connection coefficients are not components of a Tensor.
6. The connections D and D' are equal if they have the same geodesic and same torsion tensor.
7. Explain Lie derivative with its five properties.
8. State and prove 1st Bianchi identity.

9. State and prove 2nd Bianchi identity.
10. Structural equations of Cartan.
11. Explain Riemannian curvature tensor and its properties.
12. State and prove Schur theorem.
13. State and prove Gauss and Weingarten formulae.
14. S^2 is two dimensional orientable manifold.
15. Properties of vector field.
16. State Tensor product and explain its properties.
17. dA is skew symmetric.
18. The law of transformation of coefficient of connection possesses transitive property.
19. The connections D and D' have same geodesics iff $B(X,X)=0$
20. Explain properties of contraction.

Guru Nanak College Budhlada

Department of Mathematics

Question Bank

Class- M.Sc. Mathematics II

Subject- Solid Mechanics

Short Answer type Questions

1. Define isotropic tensor.
2. Prove that eigen values of a real symmetric tensor are real.
3. Define strain energy function.
4. If $W = \frac{1}{2} [e_{kk}^2 + 2\mu e_{ij}e_{ij}]$, prove that $W = \frac{1}{2} \tau_{ij}e_{ij}$.
5. Give one example of plane strain deformation.
6. Define biharmonic function.
7. Define normal line load.
8. Define generalized plane stress.
9. Find the stresses with the displacement field $u = kyz, v = kzx, w = kxy$.
10. Define Poisson ration and Young's modulus.
11. What is equation of compatibility?
12. Define Principal stresses and invariants of the stress tensor.

Long Answer type Questions

1. Discuss properties of tensor.
2. Discuss generalized Hooke's law.
3. Derive Beltrami-Michell compatibility equations in terms of the stress for an isotropic solid.
4. State and prove Clapeyron's theorem.
5. Derive Beltrami-Michell compatibility condition for plane strain deformation.
6. Discuss Airy's stress function for plane strain problem.
7. Discuss general solution of the biharmonic equation.
8. State and prove theorem of minimum complementary energy.
9. Discuss Mohr's circle.
10. For the deformation defined by the linear transformation $\xi_1 = x_1 + x_2, \xi_2 = x_1 - 2x_2, \xi_3 = x_1 + x_2 - x_3$ find inverse transformation, components of rotation and strain tensor and axis of rotation.
11. Discuss Geometrical interpretation of shearing stress e_{23} .
12. Discuss balance of linear momentum and balance of angular momentum.

Guru Nanak College Budhlada

Department of Mathematics

Question Bank

Class- M.Sc. Mathematics I

Subject- Differential Equations

Short Answer type Questions

1. Show that $\Phi(t) = \begin{pmatrix} e^t & e^t & e^{2t} \\ e^t & (t+1)e^t & 2e^{2t} \\ e^t & (t+2)e^t & 4e^{2t} \end{pmatrix}$ is a fundamental matrix of the linear system

$$\frac{dx}{dt} = \begin{pmatrix} 0 & 1 & 0 \\ 0 & 0 & 1 \\ 0 & -5 & 4 \end{pmatrix} x.$$

2. State and prove Abel's Formula.
3. Compute first approximation of the equation $\frac{dy}{dx} = 1 + xy$, $y(0) = 1$.
4. Find the unique normalized homogeneous linear differential equation of order 3 whose fundamental set on some interval $a \leq t \leq b$ is given as t, t^3, t^5 .
5. Define adjoint of a second order homogenous differential equation and find same for $(t^2)\frac{d^2x}{dt^2} + 7t\frac{dx}{dt} + 8x = 0$.
6. Prove that linear combination of m solutions of the homogeneous differential equation is also a solution of the homogeneous differential equation.
7. State and prove Ascoli Lemma.
8. State Lipschitz condition. Hence, check whether the function $f(x, y) = xy^2$ satisfies Lipschitz condition.
9. Show that the function $f(x) = \sqrt{\frac{2}{\pi}} \sin x$ is normalised w.r.t weight function $r(x) = 1$ on $0 \leq x \leq \pi$.
10. Determine whether the functions x^2 and x/x defined on $(-\infty, \infty)$ are linearly dependent or not.

Long Answer type Questions

1. State and prove existence and uniqueness theorem.
2. Examine existence and uniqueness of the solution of the IVP

$$\frac{dy}{dx} = y^{4/3}, \quad y(x_0) = y_0.$$

3. State and prove Ascoli's lemma.

4. State and prove Cauchy Peano Existence theorem.
5. Suppose $f \in (C, Lip)$ in D , with Lipschitz constant k . Let φ_1, φ_2 be ε_1 - and ε_2 - approximate solutions of E of class C_p^1 on some interval (a, b) , satisfying for some $\tau, a < \tau < b$, $|\varphi_1(\tau) - \varphi_2(\tau)| \leq \delta$ where δ is a nonnegative constant. If $\varepsilon = \varepsilon_1 + \varepsilon_2$, then for all $t \in (a, b)$,

$$|\varphi_1(t) - \varphi_2(t)| \leq \delta e^{k|t-\tau|} + \frac{\varepsilon}{k}(e^{k|t-\tau|} - 1).$$

6. Find the characteristic values and characteristic functions of Sturm-Liouville problem

$$\frac{d}{dx} \left[x \frac{dy}{dx} \right] + \frac{\lambda}{x} y = 0, y'(1) = 0, y'(e^{2\pi}) = 0, \lambda \geq 0.$$

State and prove Abel-Liouville formula.

7. Find the unique solution φ of the non-homogeneous linear system

$$\frac{dx}{dt} = \begin{pmatrix} -1 & 1 \\ -12 & 6 \end{pmatrix} x + \begin{pmatrix} 3e^{4t} \\ 8e^{4t} \end{pmatrix} \text{ that satisfies the initial condition } \varphi(0) = \begin{pmatrix} 2 \\ 4 \end{pmatrix}.$$

8. If the n vectors functions are linearly dependent on $a \leq t \leq b$, then prove that their Wronskian equals to zero for all t .

9. Prove that the second order self-adjoint equation can be transformed into the equivalent self-adjoint equation $\frac{d}{dt} \left[P(t) \frac{dx}{dt} \right] + Q(t)x = 0$ on $a \leq t \leq b$.

10. Let φ be a fundamental matrix of a homogeneous linear vector differential equation and let

φ be an arbitrary solution on the real interval $[a, b]$. Then \exists a constant vector $c = \begin{pmatrix} c_1 \\ c_2 \\ \vdots \\ c_n \end{pmatrix}$ such that

$\varphi = \Phi$ on $[a, b]$.

Guru Nanak College Budhlada

Department of Mathematics

Question Bank

Class- M.Sc. Mathematics I

Subject- Differential Geometry

Short Answer type Questions

1. Calculate the fundamental magnitude for the coinoid $x=ucosv$, $y=usinv$, $z=f(v)$ with u , v as parameters.
2. Define orthogonal trajectories.
3. Is the surface $e^z \cos x = \cos y$, a minimal surface?
4. Compute torsion of curve $\gamma(\theta) = (a \cos \theta, a \sin \theta, b \theta)$.
5. State Meusniers theorem.
6. Find equation for the tangent plane to the surface $z = x^2 + y^2$ at the point $(1, -1, 2)$.
7. Define holomorphic function and state its relation with minimal surface.
8. Explain Geodesics as shortest path.
9. What is condition for two parametric curves to be orthogonal?
10. State Gauss characteristic equation.
11. Calculate the second fundamental magnitude for the helicoid $\sigma(u, v) = (v \cos u, v \sin u, u)$.
12. Define Umblic point.
13. Compute principal curvature of unit sphere.
14. Define Pseudosphere.
15. Define Gaussian and Mean Curvatures.
16. Show that there is no compact minimal surface.
17. Find the geodesics of unit cylinder.
18. Show that if a curve is both asymptotic and geodesics then it must be a straight line
19. State formula for Normal and Geodesic curvature
20. State Gauss remarkable theorem.

Long Answer type Questions

1. Define evolute of a curve and find curvature and torsion for it.
2. State and prove Rodriques formula.
3. State and prove Weingarten equations.
4. State and prove Gauss formula.
5. State and prove Gauss remarkable theorem.
6. Define Geodesics and state and prove normal property of Geodesics.
7. Find the values of first curvature and Gaussian curvature at any point of right helicoids $r = (u \cos v, u \sin v, av)$. Hence show that the right helicoid is a minimal surface.
8. Find differential equation of Geodesics.
9. Discuss effect of reparametrisation, isometry and dilatation on First fundamental form.

10. Let K_1 and K_2 be the principal curvatures of a surface S the K_1 and K_2 are the roots of the equation $\begin{vmatrix} L - KE & M - KF \\ M - KF & N - KG \end{vmatrix} = 0$.

11. State and prove Euler's Theorem.

12. State and prove Codazzi-Mainardi Equations.

13. Suppose that the surface variation ϕ_t vanishes along the boundary curve \mathcal{C} . Then

$$\dot{A}(o) = -2 \int H (EG - F^2)^{\frac{1}{2}} \alpha du dv.$$

14. On surface of revolution given by $\sigma(u, v) = (f(u) \cos v, f(u) \sin v, g(u))$, We have

(i) Every meridian is a geodesic

(ii) A parallel $u = u_0$ is a geodesic iff $\frac{df}{du} = 0$ when $u = u_0$ i.e. u_0 is a stationary point of $f(u)$.

15. Find differential equation of Geodesics.

MST October 2023

Guru Nanak College, Budhlada

Subject: Entrepreneurship Development and Business Communication MM: 30

Time: 2 Hr.

Do 3 question from Sec-A. Question 1 to 4 carry 7 marks each and question 5 is compulsory question carry 9 marks.

Sec: A

1. Define entrepreneur write its concept and characteristics.
2. Explain Indian policy reform impact on Indian industrial economical growth.
3. Discuss in detail SWAT analysis.
4. Discuss problem solving ability.

Sec B

5. Write short note a) Entrepreneurship b) EDP (Entrepreneurial Development Programme)
c) Entrepreneurial Development Policy.

MST October 2023

Guru Nanak College, Budhlada

Subject: Geoinformatics nano technology and Precision agriculture

MM: 30

Time: 2 Hr.

Do any 3 questions carry 6 marks each from section A. do all Sec. B

Sec: A

6x3 = 18

1. What is remote sensing technology. write it's application in agriculture.
2. Explain precision agriculture explain its concern with Indian ariculture.
3. Discuss the image process method.
4. Explain Crop discrimination in details.

Sec: B

5. Answer the following 3x4 = 12

a) SSNM b) GIS and Soil Maping c) NDVI d) Supervised classification or
unsupervised

Question Bank
Direct Tax Laws
M.Com IInd Year IIIrd Sem

- Q.1: What is causal Income?
- Q.2: Define Tax Evasion and Tax Avoidance
- Q.3: Describe Hindu Undivided Family.
- Q.4: Income deemed to accrue or arise in India
- Q.5: Meaning of Indian Income and Foreign Income under Income Tax
- Q.6: Define meaning of Previous year and Assessment Year under Income Tax
- Q.7: What is Income Tax? Describe the history of Income Tax in India. What is the basis and procedure of charged Income Tax in India?
- Q.8: What do you mean by residential status? Explain the provision to determine residential status of Individual.
- Q.9: What are different categories of assesses according to their residential status? How is this status determined?
- Q.10: Define Agricultural Income as defined under section 2 (IA) of Income Tax Act 1961, what is partly agriculture and partly non agriculture Income?
- Q.11: What are different incomes which are fully exempted under section 10 of Income Tax Act?
- Q.1: How to Calculate of Annual Value of House.
- Q.2: Define Fair Rent and Annual Rent under Income from house property
- Q.3: Give the List of Taxable Perquisites and Taxable Allowance
- Q.4: What is the provision of Entertainment Allowance.
- Q.5: Give a short note on following:
- a) House Rent Allowance b) Rent Free house
 - c) Medical Facility d) Car Facility
 - e) Leave Travel Concession
- Q.6: What is block of Assets under Income Tax
- Q.7: Explain clearly the deductions that are expressly allowed in computing the income from business under the Income Tax Act 1961.
- Q.8: Explain the detail provision of taxable income from house property.
- Q.9: Explain the chargeability of tax under "Income from House Property".
- Q.10: Discuss the composition of salary from Income Tax point of view. Discuss the fully Tax free allowances.
- Q.1: Define carry forward of losses. Give List the losses that cannot be carry forward.
- Q.2: Additional Depreciation
- Q.3: Tax on interest income of saving bank account

Question Bank

M.Com IInd Year IVth Semester

Banking and Insurance Services

1. What are the different functions of Commercial Banks? Examine the progress of Commercial Banking in India.
 2. What are the different credit products offered by Commercial Banks? Explain the salient features of these credit products.
 3. What do you mean by management of funds in Commercial Banks? Explain the approach you would follow for management of funds in Commercial Banks.
 4. What do you mean by e-banking? What is significance? Explain the recent trend in e-banking in India.
 5. What do you mean by Insurance? Write a note on the organizational structure of Insurance Business in India.
 6. What are the objectives of regulation of Insurance Business? Write a note on provisions of IRDA in this context.
 7. What are the major non-life insurers in India? Examine the progress of non-life Insurance Business in India.
 8. Examine the importance of risk management in Insurance Business. Are you satisfied with the risk management practices in insurance sector in India?
-
1. Recurring Deposits?
 2. Credit Appraisal?
 3. Securitisation?
 4. Asset Liability Management?
 5. Home Banking?
 6. e-funds Transfer?
 7. Cash Dispensers?
 8. Medical Insurance?
 9. Double Insurance?
 10. Theft Insurance?
 11. Diffusion of Risk?
 12. Indemnity?

Question Bank
INCOME TAX
B.Com & B.Com (H) II

- Q.1: What is causal Income?
- Q.2: Define Tax Evasion and Tax Avoidance
- Q.3: Describe Hindu Undivided Family.
- Q.4: Income deemed to accrue or arise in India
- Q.5: Meaning of Indian Income and Foreign Income under Income Tax
- Q.6: Define meaning of Previous year and Assessment Year under Income Tax
- Q.7: What is Income Tax? Describe the history of Income Tax in India. What is the basis and procedure of charged Income Tax in India?
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- Q.8: Explain the detail provision of taxable income from house property.
- Q.9: Explain the chargeability of tax under "Income from House Property".
- Q.10: Discuss the composition of salary from Income Tax point of view. Discuss the fully Tax free allowances.
- Q.1: Define carry forward of losses. Give List the losses that cannot be carry forward.

Question Bank

M.Com I

Research Methodology

1. What do you mean by research and its nature, objectives
2. Types of research, utility of research
3. Meaning, objectives, types of research: longitudinal and cross section
4. Sources of research problem
5. What is hypothesis, criteria for construction of hypothesis
6. Sources of hypothesis
7. Null hypothesis, testing of hypothesis, sources of driving hypothesis
8. Types of research design
9. Sources of secondary data, role of computer
10. Syndicated service, different between primary and secondary data
11. Sources of primary data, where the primary data can use?
12. Interview, mail survey, schedule, observation, questionnaire
13. Different between questionnaire and schedule
14. Pre-testing of questionnaire
15. Open-ended and close-ended questionnaire
16. Sampling and non-sampling errors, size of samples, sampling frame
17. Introduction of sampling design, process, sampling techniques
18. Probability and non-probability of sampling design
19. Introduction of data analysis and practical question
20. Additive theorem and multiple theorem
21. Binomial distribution
22. Poisson distribution
23. Normal distribution
24. Testing of parametric or non-parametric test
25. Difference of parametric and non parametric
26. Diff type t-test and z-test
27. F-test, Chi-Square test, power of test
28. Degree of freedom
29. Goodness of fit
30. Kurukul-wallis, h test, Kendall's coefficient of concordance
31. Wald-wofowitz test
32. Report writing: introduction, qualities, types, references, bibliography.

Question Bank
B.Com (H) III
E-COMMERCE

Long questions

1. E-Commerce, Features, Benefits and Limitations
2. E-Commerce V/S Traditional Commerce
3. Types of E-Commerce
4. Electronic Payment System
5. Credit Card, Debit Card, Smart Card and their difference
6. EBT-Electronic Benefit Transfer
7. Tools of Security, Encryption, Decryption, Digital Signature
8. B2C, Process, Cataloging Etc.
9. Models for B2B E-Commerce
10. E-Governance Models
11. Types of - Governance, Applicability, Benefits Etc.

Short Notes

1. Types of E-Commerce
2. E-Commerce V/S E-Business
3. Online Shopping, Online Store
4. Digital Cash, E-Cheque, Digital Wallet.
5. Secure Electronic Transaction
6. Features of Security
7. Secure Socket Layer
8. Biometric Measures
9. Cataloging, Order Scheduling
10. Disintermediation and Re-intermediation
11. E-Brokers
12. Types of Auctions
13. E-Services, E-Banking, E-Retailing Etc.
14. Scope of E-Governance

Guru Nanak College, Budhlada
Department of Commerce and Management

Question Bank of Corporate Legal Framework
(For M.Com 2nd Year)
Long Questions

- 1) Define the term company. What are its characteristics?
- 2) "A company is an artificial person, created by law with a perpetual succession and a common seal." Explain this statement.
- 3) Explain the various types of the companies which can be registered under the companies act, 2013.
- 4) Distinguish between a private and a public company.
- 5) What do you understand by the memorandum of association? And what is the procedure for alteration of a memorandum of association?
- 6) Define the Doctrine of the ultra vires? Explain its' consequences and exceptions.
- 7) Distinguish between memorandum and articles of association?
- 8) What is a prospectus? Who are liable for mis-statement in a prospectus? Explain the extent of civil and criminal liability for such mis-statement?
- 9) A company limited by shares has no power to buy its own shares. Comment.
- 10) Discuss the provision of law relating to appointment tenure of alternative director and additional director?
- 11) What are the powers and duties of the directors?
- 12) What are the various kinds of meetings that can be held by a company and of the nature of business that can be transacted in each meeting?
- 13) Give legal provisions relating to the annual general meeting of a company?
- 14) What do you understand by the windings up of a company? What are the various modes of winding up?
- 15) Describe the duties and power of liquidator appointment by the tribunal?
- 16) Who is a member? How can the membership of a company be acquired?
- 17) Explain the concept of "Supermajority of Majority will prevail"?
- 18) How are the directors of a public company appointed? How are they removed?
- 19) State the persons who can make a winding up petition to the court against a company.
- 20) What do you mean by negotiable instrument? What are the different types of negotiable instrument? What are their salient features?
- 21) What do you mean by crossing of a Cheque? What are the consequences of crossing of a Cheque? What are the requisites of a valid crossing?
- 22) "Competition Act, 2002 aims at increasing competition and improving efficiency and productivity". Do you agree?
- 23) What are the functions and powers of competition commission of India? How has the competition commission of India affected industrial progress in India?
- 24) Explain the various privileges available to a Holder in due course?

Guru Nanak College, Budhlada
Department of Commerce and Management

Question Bank of International Finance
(For M.Com 2nd Year)

Long Questions

1. What are the functions of International Finance Manager? Explain.
2. What is International Monetary System? Explain the various systems emerged in IMS.
3. What do you understand by BOP? Explain the various components of BOP?
4. Write a note on the following Trade Blocs:
 - a) NAFTA
 - b) SAARC
5. Discuss the various theories of determination of exchange rate?
6. What is FOREX Market? Explain the structure of International Foreign Exchange Market?
7. Define Foreign Exchange Exposure. What are the various types of foreign exchange exposures?
8. Write a detailed note on Multinational Receivable Management?
9. Finance Manager plays an indispensable role in MNC's? Explain.
10. Explain the main reasons for the existence of International Trade.
11. What are the conflicts of Interest and constraints that multinational companies face?
12. Explain the differences and similarities between forward and futures contracts.
13. Write the structure of IMF?
14. What are the characteristics of Future Contract?
15. What is BOP? What are the measures to correct disequilibrium in BOP?
16. Discuss nature and scope of international financial decision.
17. Explain the various sources of international finance.
18. Distinguish between financial future and forward contract. Also discuss the role of financial futures in international currency markets.
19. Explain mechanics of currency swap with suitable example.

Short Questions

- Q1. Define the concept of International Finance.
- Q2. What is IMF?
- Q3. Give the objectives of WTO?
- Q4. What is Globalisation. Explain its salient features.
- Q5. Draw a demarcation between Balance of Trade and Balance of Payment.
- Q6. Write a note on FDI and FII.
- Q7. Discuss in brief the benefits of MNCs over Domestic Companies.
- Q8. Explain the Concept of ADRs and GDRs.
- Q9. Differentiate between Futures and Options.
- Q10. Explain the concept of Netting and Hedging.
- Q11. Forfeiting?

GURU NANAK COLLEGE BUDHLADA
Department of Commerce and Management
Important questions of Indirect tax

(For Classes-B.Com and B.Com (H) 3rd Year)

LONG ANSWER TYPE QUESTIONS

1. Explain meaning of GST. Its features, advantages and disadvantages.
2. Explain the models of GST in different countries.
3. What is the procedure of registration under GST?
4. Explain about the time and supply of goods and services under GST.
5. Explain the different methods for the valuation of supply.
6. Give the detail description of COMPOSITION Scheme.
7. What are the powers of officers under the central goods and service act?
8. What is input tax credit?
 - Conditions for availing input tax credit.
 - Period for availing input tax credit.
 - Manner for taking credit of IGST/CGST/SGST.
 - Documents required for taking input tax credit.
 - Blocked credit.
 - Apportionment of credit.
 - Input tax credit on capital goods.
 - Input tax credit for job workers.
 - Input tax credit in special circumstances.
9. Explain about the filing of return under GST.
10. What are the different types of assessments under GST?
11. Explain in detail about the payments under GST.
12. Explain the different offences and penalties.
13. Explain the power of search and seizure of CGST/ SGST officer.
14. What is the hierarchy of appeals and revisions under GST.
15. Explain the different duties under the Customs act.
16. Explain the Valuation of goods under custom act.
17. What is the import and export procedure under customs?
18. What are the exemptions under the customs duty?
19. Describe the Kelkar Shah Model of GST. Explain the main basis of this model. Discuss the details and salient features of the model.
20. Explain the following activities of GST :
 - (a) Registration.
 - (b) Cancellation procedure
 - (c) Amendments

CORPORATE ACCOUNTING

(Question Bank For B.Com 3rd Semester)

Long Answer Questions:

- 1) What is Share Capital and its types.
- 2) Redemption of Preference Shares with Journal entries.
- 3) SEBI guidelines related to issue of Bonus shares.
- 4) Underwriting and Types of Underwriters.
- 5) Provisions of Accounting Standard 21 (Consolidated Financial statement).
- 6) Sinking Fund and its Accounting treatment.
- 7) Methods and Sources of Redemption of Debentures.
- 8) Explain Cum Interest and Ex Interest. Difference between them.
- 9) Numericals of Redemption of Preference Shares.
- 10) Numericals of Forfeiture and Re-issue.
- 11) Numericals of Firm Underwriting.
- 12) Numericals from Right Issue.
- 13) Performa of Balance sheet and Profit & Loss account of Final Accounts.
- 14) Numericals of Final Accounts.
- 15) Provisions related to Managerial Remuneration
- 16) What restrictions are imposed by the Companies Act, on the payment of underwriting commission?
- 17) Explain the provisions of companies act regarding maintenance of proper books of accounts.
- 18) State how to disclose the following terms in the final accounts of a limited company :
 - (i) Collateral security given by a director.
 - (ii) Arrear dividend on cumulative preference shares.
- 19) State the statutory provisions relating to issue of shares at premium.
- 20) Explain the concept of Minority Interest along with its' accounting treatment.
- 21) Discuss the provisions of Sec.55 of Companies Act, 2013.

Short Answer Questions

- 1) Explain Statutory Books.
- 2) Explain Sweat Equity Shares.
- 3) Explain Security Premium.
- 4) Issue of Shares for consideration other than Cash.
- 5) Difference b/w Forfeiture and Surrender of Shares.
- 6) Explain ESOP.
- 7) Provisions of Redemption of Preference Shares.
- 8) Profits available for Redemption of Preference Shares.
- 9) Marked Applications and Unmarked Applications.
- 10) Profit prior to incorporation.

Guru Nanak College, Budhlada
Department of Commerce and Management

Question Bank of Company Law

Long Questions

- 1) Define the term company. What are its characteristics?
- 2) "A company is an artificial person, created by law with a perpetual succession and a common seal." Explain this statement.
- 3) Explain the various types of the companies which can be registered under the companies act, 2013.
- 4) Distinguish between a private and a public company.
- 5) What do you understand by the memorandum of association? And what is the procedure for alteration of a memorandum of association?
- 6) Define the Doctrine of the ultra vires? Explain its' consequences and exceptions.
- 7) Distinguish between memorandum and articles of association?
- 8) What is a prospectus? Who are liable for mis-statement in a prospectus? Explain the extent of civil and criminal liability for such mis-statement?
- 9) A company limited by shares has no power to buy its own shares. Comment.
- 10) Discuss the provision of law relating to appointment tenure of alternative director and additional director?
- 11) What are the powers and duties of the directors?
- 12) What are the various kinds of meetings that can be held by a company and of the nature of business that can be transacted in each meeting?
- 13) Give legal provisions relating to the annual general meeting of a company?
- 14) What do you understand by the windings up of a company? What are the various modes of winding up?
- 15) Describe the duties and power of liquidator appointment by the tribunal?
- 16) Who is a member? How can the membership of a company be acquired?
- 17) Explain the concept of "Supermacy of Majority will prevail"?
- 18) How are the directors of a public company appointed? How are they removed?
- 19) State the persons who can make a winding up petition to the court against a company.

Short Questions

- 1) What do you understand by 'perpetual succession' of a company?
- 2) What is a holding company?
- 3) Who is a promoter?
- 4) Who issues a certificate of incorporation?

QUESTION BANK OF ECONOMICS

Principles of Economics-I/Micro Economics

B.Com-I, B.Com-I (Hons.)

Long Questions:

1. What do you mean by Demand Function? Explain the factors affecting demand.
2. State and explain the law of Demand. Why does demand curve slope downward?
3. State and explain the Law of Diminishing Marginal Utility. Also explain the exceptions of the law.
4. State and explain the Law of Equi-Marginal Utility. Also explain the importance of the law.
5. Define Indifference Curve. Explain its properties.
6. What is an indifference curve? Explain Income Effect, Price Effect and Substitution Effect.
7. Define Price Elasticity of Demand. Explain the various methods of explain it.
8. What do you mean by consumer's equilibrium? How it determined with ordinal approach?
9. What do you mean by consumer's equilibrium? How it determined with cardinal approach?
10. Explain the three stages of Law of Variable Proportion.
11. Explain the Law of Returns to Scale with the help of table and diagrams.
12. Explain the relationship between Total Revenue, Average Revenue and Marginal Revenue with the help of table and diagrams.
13. How price and output of firm is determined under perfect competition in the short run and long run period.
14. Define Monopoly? How price and output is determined under monopoly?
15. How price and output of firm is determined under monopolistic competition in the short run and long run period.
16. How price and output of industry is determined under perfect competition in the short run and long run period.
17. State and explain the Law of Decreasing Returns. Why does it applicable to agriculture only.
18. State and explain the Law of Increasing Returns. Also explain why it applicable to manufacturing only.

Short Note:

1. Define Consumer Equilibrium.
2. Define Price Line/ Budget Line.
3. Define Indifference Curve.
4. Define Selling Costs.
5. Monopolistic Competition.
6. Define Utility.
7. Distinguish between decrease in demand and extension of demand.
8. Define Elasticity of demand.
9. Meaning of Break-even Point.
10. Internal economies to scale.
11. Price-discrimination.
12. Distinguish between perfect competition and monopolistic competition.
13. Define Indifference Map.
14. Perfect Competition.
15. What is Kinked Demand Curve?
16. Define Monopoly.
17. Distinguish between firm and industry.
18. Types of demand.
19. Distinguish between internal and external economies of scale.
20. Distinguish between internal and external diseconomies of scale.
21. Define Giffen goods.
22. Distinguish between Perishable Goods and Durable goods.
23. Write four features of Indifference Curve.
24. Write conditions of Consumer Equilibrium of ordinal utility analysis.
25. Define Income elasticity of demand.
26. Define Cross Elasticity of demand.
27. Define TR, AR and MR.
28. Define Marginal Rate of Substitution.
29. Define Engle Curve.
30. What do you mean by profit forecasting?
31. Isoquant technique

Principles of Economics-II/Macro Economics

B.Com-I, B.Com-I (Hons.)

Long Questions:

1. Discuss the various methods of measuring National Income.
2. Discuss the features of Macro Economics.
3. What do you mean by Macro economics? Also discuss its importance.
4. "Supply creates its own demand" critically explain this statement.
5. "Full employment is a normal feature of capitalist economy" critically explain this statement.
6. Explain the Classical theory of income Output and employment. Also explain its significance.
7. Explain the Keynesian theory of income Output and employment. Also explain its significance.
8. State and explain the Psychological Law of Consumption functions along its implications.
9. State and explain the working of Multiplier.
10. State and explain the Static and Dynamic working of Multiplier.
11. "Multiplier is a two edge sword" explain it.
12. What is MEC? Discuss the factors of affecting marginal efficiency of capital.
13. What is Inflation? Explain the causes and effects of inflation.
14. Explain the Demand pull and cost push theory of inflation.
15. What is Trade Cycle? Explain the four phases of trade cycle.
16. What do you mean by consumption function? Explain the factors influencing consumption function.
17. Define investment. Also discuss its determinants.
18. Define Multiplier. Explain the relationship between marginal propensity to consume and multiplier.
19. Discuss causes of inflation and measures to control it.
20. Define Investment. Explain the factors on which influence the level of investment in an economy.
21. Define propensity to consume. Discuss the factors which determine the propensity to consume.

Micro Economics and Indian Economy-I

B.A.-I, SEM-I,

Long Questions:

1. Critically examine the Scarcity definition of Economics.
2. How price and output of firm is determined under perfect competition in the short run and long run period.
3. What do you understand by Industry's equilibrium in short run and long run under perfect competition?
4. Define Monopoly? How price and output is determined under monopoly?
5. Define Discriminating Monopoly. How price and output is determined under it.
6. How price and output of industry is determined under perfect competition in the short run and long run period.
7. Critically explain the classical theory of rent.
8. Critically explain the Loanable fund theory of rent.
9. Explain the Ricardian theory of Rent.
10. Critically examine Risk theory of Profit.
11. Critically examine Uncertainty theory of Profit.
12. Critically explain the Modern theory of Rent.
13. Explain the theory of factor pricing.
14. Explain Dynamic theory of Profit and Innovation theory of Profit.
15. Explain main Features and defects of Indian Taxation System.
16. Explain composition and direction of foreign trade in India.
17. Define Balance of Payment. Explain its components.
18. What are the causes of unfavourable balance of payments and explain the measures to correct it.
19. Discuss the main objectives and features of economic planning in India.
20. Explain the achievements and failures of economic planning in India.
21. Define population explosion. Discuss the causes of over population and steps taken by the government to control it.
22. Explain the causes of poverty in India and explain the measures taken by the Government for poverty alleviation.
23. What are the causes of Unemployment in India and explain the steps that are taken by the government of India to increase employment.
24. Explain the causes of inflation and what measures are taken to control inflation.

MACRO ECONOMICS AND PUBLIC FINANCE

B.A. PART-II (THIRD SEMESTER)

Long Questions:

1. "Supply creates its own demand" critically explain this statement.
2. "Full employment is a normal feature of capitalist economy" critically explain this statement.
3. Explain the Classical theory of income Output and employment. Also explain its significance.
4. Explain the Keynesian theory of income Output and employment. Also explain its significance.
5. State and explain the Psychological Law of Consumption functions along its implications.
6. What do you mean by consumption function? Explain the factors influencing consumption function.
7. Define investment. Also discuss its determinants.
8. Define Investment. Explain the factors on which influence the level of investment in an economy.
9. Define propensity to consume. Discuss the factors which determine the propensity to consume.
10. State and explain the working of Multiplier.
11. State and explain the Static and Dynamic working of Multiplier.
12. "Multiplier is a two edge sword" explain it.
13. What is MEC? Discuss the factors of affecting marginal efficiency of capital.
14. Define Multiplier. Explain the relationship between marginal propensity to consume and multiplier.
15. What is macroeconomics? Discuss its importance.
16. What do you mean by inducement to invest? Explain the factors which affect inducement to invest in an economy.
17. What is meant by public expenditure? Discuss causes of its growth in modern times.
18. Define Public Finance. Discuss its nature and scope.
19. What is meant by public expenditure? Explain its effects on production and distribution.
20. What are the causes of the growth of public expenditure?
21. What is tax? Explain the types and canons of taxation.
22. Explain various types of public debt. Discuss economic effects of public debt.
23. Explain the methods of debt redemption.
24. Discuss the incidence and impact of taxation.

Guru Nanak College, Budhlada
Department: Commerce and Management
Subject: Business Accounting
Class:-B.B.A. 2nd

Time Allowed: 3 Hrs.

Max. Marks: 60

Note:-The question paper will consist of three sections. Section A will consist short answer type questions. Section B and C will have four questions and candidates are required to attempt two questions each from section B and C.

Section-A

10X2=20

1. Write short notes:-
 - a. Accounting.
 - b. Book-Keeping.
 - c. Real Account.
 - d. Money Measurement.
 - e. Business entity
 - f. Ledger.
 - g. Difference between Purchase Book and Purchase Account.
 - h. Current Assets.
 - i. Purchased goods from Ram Rs. 10,000.
 - j. Trade discount and Cash discount.

Section-B

10X2=20

2. What do you mean by Accounting? What are the advantages and limitations of Accounting?
3. Explain the concept of Accounting.
4. Define Ledger. What are the difference Between Ledger and Journal?
5. Pass journal Entries and prepare Furniture Account:-

2010. jan1.	Furniture purchased for cash	20,000
Jan5.	Furniture sold for cash	2,000
Jan12.	Further furniture purchased	8,000
Jan14.	Bought equipment for cash	1,000
Jan18.	Furniture withdraw for domestic use	2,500
Jan25.	Furniture bought for personal use	3,000
Jan31.	Depreciation on furniture	500

Section-C

10X2=20

6. What is Cash Book? What are difference types of Cash Book?
7. What is Trial Balance? What are the feature and advantages of Trial Balance?
8. Explain capital expenditure and revenue expenditure. What are the difference Between Capital expenditure and revenue expenditure?
9. What do you mean by Reserve? What are the types of reserve?

1. Define research. What are the possible motivations for conducting research?
2. Explain the various steps in research process.
3. Define the hypothesis. Explain with illustration the working of one tailed and two tailed test.
4. Explain various methods of primary data collection.
5. Compare the interview method with observation method for primary data collection.
6. What is the difference between primary data and secondary data. Explain in detail the different sources of secondary data?
7. Define standard error. What is the importance of standard error in the theory of statistical inferences?
8. What is the difference between probability and non-probability sampling?
9. Define dispersion. Compare mean deviation with standard deviation and which measure in your opinion is better and why?
10. Describe the relationship between binominal, poisson and normal distribution.
11. What is t-distribution? What are the uses of t-test in research decision making?
12. What do you mean by Analysis of variance? What are the basic assumptions of ANOVA?
13. What are the steps involved in ANOVA? What are the advantages of using coding method?
14. What are the steps involved in conducting a chi-square test?
15. Define non-parametric tests. How are they different from parametric tests?
16. What is the importance of interpretation in the research process?
17. Discuss in detail the process of writing a research report.
18. What is the difference between bibliography and references? When are footnotes given in a reports?

Guru Nanak College Budhlada
Department of English
Question Bank for Quiz Competition

Questions

1. Wordsworth's famous Preface to the Lyrical Ballads was:
(A) The Preface to the first edition of the Lyrical Ballads
(B) A rejoinder to Coleridge's Biographia Literaria
(C) A separate supplement to the Lyrical Ballads
(D) The Preface to the second edition of the Lyrical Ballad

2. "We are laid asleep in body and become a living soul." which poem of Wordsworth having this line?
(A) Immortality
(B) Tintern Abbey
(C) The Prelude
(D) The Excursion

3. Why is the year 1798 taken to be the year of the beginning of the Romantic Movement?
(A) Because it was the year of Wordsworth's birth
(B) Because it was the year in which James Thomson's Seasons was published
(C) Because it was the year in which Wordsworth's Lyrical Ballads were published
(D) Because it was the year in which the French Revolution started

4. Wordsworth was popularly famous as the poet of which of the following?
(A) Lancashire Region
(B) Lake Districts
(C) Wessex Region
(D) Waverly Region

5. Wordsworth wrote a sonnet on:
(A) Shakespeare
(B) Milton
(C) Sidney

(D) Ben Jonson

6. "For Nature then
To me was all in all."

This line is taken from which of the following poem?

(A) Tintern Abbey

(B) The Excursion

(C) Education of Nature

(D) The World is Too Much with Us

7. After whom Wordsworth became the Poet Laureate of England?

(A) Robert Southey

(B) Walter Scott

(C) Coleridge

(D) Dryden

8. There are total _____ number of plays did Shakespeare write in all ?

(A) 60

(B) 38

(C) 37

(D) 20

9. ____ called Shakespeare "an upstart crow beautified with our feathers"?

(A) John Lyly

(B) Robert Greene

(C) Thomas Kyd

(D) George Peele

10. Who is the writer of the malicious pamphlet entitled "A Groat's Worth of Wit Bought with a Million of Repentance" against Shakespeare?

(A) Thomas Kyd

(B) Robert Greene

(C) George Peele

(D) John Lyly

11. Who ridiculed Shakespeare by saying that he knew “small Latin and less Greek”?

- (A) Marlowe
- (B) Sidney
- (C) Spenser
- (D) Ben Jonson

12. Who said, “Shakespeare has only heroines, and no heroes”?

- (A) Ruskin
- (B) Dr. Johnson
- (C) Matthew Arnold
- (D) T. S. Eliot

13. Aldous Huxley took the hint for the title of his novel Brave New World from Shakespeare's:

- (A) A Midsummer Night's Dream
- (B) Winter's Tale
- (C) Tempest
- (D) Antony and Cleopatra

14. Shakespeare was born at Stratford-on-Avon. Stratford was the name of the town where he was born. What was Avon?

- (A) A high plateau on which Stratford was situated
- (B) A hillock on which Stratford was situated
- (C) A river on the bank of which Stratford was situated
- (D) A heath where Stratford was situated

15. Shakespeare's King Lear was given a happy ending by one of the following playwrights. Identify the playwright:

- (A) Nahun Tate
- (B) Nathaniel Lee
- (C) Thomas Otway
- (D) George Farquhar

16. “Age cannot wither her, nor custom stale.” About whom are these lines spoken ?

- (A) Desdemona
- (B) Cordelia

- (C) Cleopatra
- (D) Miranda

17. Imogen is the main character and heroine of which of the following?

- (A) Winter's Tale
- (B) Pericles
- (C) Cymbeline
- (D) Tempest

18. Who is the author of the critical work Shakespeare's Sonnets Reconsidered?

- (A) E.M. Forster
- (B) WH Auden
- (C) Samuel Butler
- (D) Charles Lamb

19. "The greatest genius that perhaps human nature has yet produced, our myriad-minded Shakespeare." Who makes this observation?

- (A) Hazlitt
- (B) Coleridge
- (C) Southey
- (D) Byron

20. Which was the last play written by Shakespeare?

- (A) Cymbeline
- (B) The Winter's Tale
- (C) The Tempest
- (D) Pericles

21. "Sweet are the uses of adversity." This line is related to which play?

- (A) The Merchant of Venice
- (B) Romeo and Juliet
- (C) Twelfth Night
- (D) As You Like It

22. "Frailty, thy name is woman!" This line is part of which play?

- (A) Othello

- (B) Macbeth
- (C) King Lear
- (D) Hamlet

23. W.B. Yeats was a _____ .

- (A) Anglo-Scotch poet
- (B) Anglo-Indian poet
- (C) Anglo-Roman poet
- (D) Anglo-Irish poet

24. What is Yeats's The Land of Heart's Desire?

- (A) A drama in One Act
- (B) A drama in three Acts
- (C) A long narrative poem
- (D) A prose treatise

25. What is Yeats's Ideas of Good and Evil?

- (A) A Collection of Lyrics
- (B) A Collection of essays
- (C) A Collection of tales
- (D) A Collection of Odes

26. Which is a poem not created and written by Yeats?

- (A) The Statues
- (B) A Bronze Head
- (C) The Untilled Field
- (D) Vacillation

27. What is Yeats's Reveries Over Childhood and Youth?

- (A) An autobiographical treatise
- (B) A satirical treatise
- (C) A reflective treatise
- (D) A prose-work

28. Which is a poem written by Yeats?

- (A) Esther Waters
- (B) The Day's Work
- (C) Palicio
- (D) The Second Coming

29. The severe criticism of Endymion which is believed to have hastened Keats's death appeared in:

- (A) Quarterly Review
- (B) Edinburgh Review
- (C) Blackwood's Magazine
- (D) London Magazine

30. The Editors of both Quarterly Review and Blackwood's Magazine
How did Keats begin his career?

- (A) As an apprentice to an apothecary
- (B) As a proof-reader in a publisher's firm
- (C) As a sub-editor of a local Newspaper
- (D) As a clerk in an office

31. What was the cause of the death of Keats at such an early age?

- (A) Frustration in love
- (B) Adverse criticism of his poetry
- (C) Drowning
- (D) Disease of consumption

32. Hyperion presents a war between:

- (A) Satan and Archangels
- (B) Gods and Devils
- (C) Titans and Olympians
- (D) Greeks and Trojans

33. Who was Lamia?

- (A) A fairy
- (B) An enchantress
- (C) A serpent-woman
- (D) A nymph

34. Isabella is a story of love between Isabella and:

- (A) Porphyro
- (B) Lorenzo
- (C) Laciuss
- (D) Corinth

35. Who is the writer of a famous Pastoral Elegy on the death of Keats?

- (A) Wordsworth
- (B) Byron
- (C) Walter Scott
- (D) Shelley

36. Who says Keats "one of the inheritors of unfulfilled renown?"

- (A) Byron
- (B) Shelley
- (C) Walter Scott
- (D) None of these

37. Dryden's Essay of Dramatic Poesy in

- (A) A long poetical work
- (B) A play in Five Acts
- (C) A critical treatise on dramatic art developed through dialogues
- (D) A long essay on the art and craft of English dramatists

38. Dryden's Essay of Dramatic Poesy develops through dialogues amongst four interlocutors. One of the following is not one of those interlocutors. Identify him:

- (A) Eugenius
- (B) Crites
- (C) Neander
- (D) Leslie

39. One of the following interlocutors in Dryden's Essay of Dramatic Poesy represents Dryden himself. Identify him:

- (A) Eugenius
- (B) Crites
- (C) Lisidelus
- (D) Neander

40. Which plays is not created and written by Dryden?

- (A) All For Love
- (B) Conquest of Granada
- (C) Love's Labour's Lost
- (D) Tyrannic Love

41. "Here is God's plenty" Who is Dryden referring to in this remark?

- (A) Chaucer
- (B) Marlowe
- (C) Shakespeare
- (D) Spenser

42. Dryden's All For Love is based on:

- (A) Samson Agonistes.
- (B) Antony and Cleopatra
- (C) Caesar and Cleopatra
- (D) Romeo and Juliet

43. The central idea/theme of Dryden's The Hind and the Panther is:

- (A) Defence of Puritanism
- (B) Defence of Protestantism
- (C) Defence of Roman Catholicism
- (D) Defence of Anglicanism

44. Dryden's The Medal is a personal satire on:

- (A) Charles 1
- (B) James II
- (C) Shaftesbury
- (D) John Bunyan

45. "Here lies my wife, here let her rest!

Now she is at rest, and so am I."

This was a proposed epitaph to be engraved on the tomb of his wife. Who was this poet?

- (A) John Dryden
- (B) Ben Jonson
- (C) Alexander Pope
- (D) Samuel Butler

46. Dryden was hailed as "The Father of English criticism." Who hailed him thus ?

- (A) Coleridge
- (B) Pope
- (C) Addison
- (D) Dr.Johnson

47. What special epithet is given to Dryden's plays in general?

- (A) Horror plays
- (B) Historical Tragedy
- (C) Revenge plays
- (D) Heroic plays

48. Zimri, Duke of Buckingham, is a character that appears in Dryden's:

- (A) MacFlecknoe
- (B) The Rehearsal
- (C) The Medal
- (D) Absolem and Achitophel

49. To _____, T.S. Eliot dedicate his The Waste Land?

- (A) John Ruskin
- (B) Bernard Shaw
- (D) Ezra Pound
- (C) Rudyard Kipling

50. To _____, T.S. Eliot dedicate his Prufrock and Other Observations?

- (A) W.B. Yeats
- (B) Ezra Pound
- (C) Jean Verdenal
- (D) FR. Leavis

51. Who was the author of the famous storybook 'Alice's Adventures in Wonderland'?

- A. Rudyard Kipling
- B. John Keats
- C. Lewis Carroll
- D. H G Wells

52. Who wrote the famous 1855 poem 'The Charge of the Light Brigade'?

- A. Lord Alfred Tennyson
- B. Christopher Marlowe
- C. Johannes Gutenberg
- D. René Descartes

53. Who wrote 'Where ignorance is bliss, it is folly to be wise'?

- A. Browning
- B. Marx

- C. Shakespeare
- D. Kipling

54. Name the book which opens with the line 'All children, except one grew up'?

- A. The Railway Children
- B. Winnie the Poo
- C. Jungle book
- D. Peter Pan

55. Which is the first Harry Potter book?

- A. HP and the Goblet of Fire
- B. HP and the Philosopher's Stone
- C. HP and the Chamber of Secrets
- D. HP and the God of small Things

56. In which century were Geoffrey Chaucer's Canterbury Tales written?

- A. 13th – 14th
- B. 14th – 15th
- C. 15th -16th
- D. 16th – 17th

57. What was the nationality of Robert Louis Stevenson, writer of 'Treasure Island'?

- A. Scottish
- B. Welsh
- C. Irish
- D. French

58. 'Jane Eyre' was written by which Bronte sister?

- A. Anne
- B. Charlotte
- C. Emily
- D. None of the above

59. What is the book 'Lord of the Flies' about?

- A. A round trip around the USA
- B. A swarm of killer flies
- C. Schoolboys on the desert island
- D. None of the above

60. In the book 'the Lord of the Rings', who or what is Bilbo?

- A. Dwarf
- B. Wizard
- C. Hobbit
- D. Troll

61). Who is often referred to as the “Bard of Avon” and is considered one of the greatest playwrights in English literature?

- a) John Milton
- b) William Shakespeare
- c) Charles Dickens
- d) Jane Austen

62.) Which epic Old English poem tells the story of the hero Beowulf and his battles against monsters and dragons?

- a) The Canterbury Tales
- b) Paradise Lost
- c) Beowulf
- d) The Divine Comedy

63). Which English Romantic poet wrote the poem “Ode to a Nightingale” and is known for his association with “Lake Poets” like Wordsworth and Coleridge?

- a) Lord Byron
- b) John Keats
- c) William Wordsworth
- d) Percy Bysshe Shelley

64.) Who wrote the novel “Pride and Prejudice,” exploring themes of love, class, and societal expectations in 19th-century England?

- a) Jane Austen
- b) Charlotte Bronte
- c) George Eliot
- d) Emily Dickinson

65.) Which Victorian author wrote the novel “Oliver Twist,” depicting the struggles of a young orphan in London’s impoverished neighborhoods?

- a) Charles Dickens
- b) Thomas Hardy
- c) George Eliot
- d) Emily Bronte

66.) Who is known for the Gothic novel “Frankenstein; or, The Modern Prometheus,” which explores themes of creation and responsibility?

- a) Mary Shelley
- b) Bram Stoker
- c) Edgar Allan Poe
- d) Oscar Wilde

67.) Which English playwright wrote the comedy “The Importance of Being Earnest” and is known for his wit and satire?

- a) Oscar Wilde

- b) George Bernard Shaw
- c) Samuel Beckett
- d) William Congreve

68.) Who is the author of the novel "To Kill a Mockingbird," which addresses themes of racial injustice and moral growth in the American South?

- a) Harper Lee
- b) J.D. Salinger
- c) Ernest Hemingway
- d) F. Scott Fitzgerald

69.) Which author wrote the epic fantasy series "The Lord of the Rings" and "The Hobbit"?

- a) J.R.R. Tolkien
- b) C.S. Lewis
- c) J.K. Rowling
- d) Philip Pullman

70.) In which Shakespearean tragedy does the character Othello, a Moorish general, become manipulated by the villain Iago?

- a) Hamlet
- b) Macbeth
- c) Othello
- d) King Lear

71.) Who wrote the novel "Jane Eyre," a coming-of-age story of a young orphaned governess?

- a) Charlotte Brontë
- b) Emily Brontë
- c) Anne Brontë
- d) Mary Shelley

72.) Which English Romantic poet authored "Songs of Innocence and of Experience," "The Tyger," and "The Lamb"?

- a) Samuel Taylor Coleridge
- b) John Keats
- c) William Wordsworth
- d) William Blake

73.) Which Shakespearean comedy revolves around the twins Viola and Sebastian and features mistaken identities and humorous confusion?

- a) A Midsummer Night's Dream
- b) Twelfth Night
- c) Much Ado About Nothing
- d) The Taming of the Shrew

74.) In which novel do we find the characters Elizabeth Bennet and Mr. Darcy and the famous opening line: "It is a truth universally acknowledged, that a single man in possession of a good fortune, must be in want of a wife"?

- a) Pride and Prejudice
- b) Sense and Sensibility
- c) Mansfield Park
- d) Emma

75.) Who wrote the play "Romeo and Juliet," a tragic love story set in Verona, Italy?

- a) William Shakespeare
- b) Oscar Wilde
- c) Tennessee Williams
- d) Anton Chekhov

76. Which day is observed as 'International Day Against Drug Abuse and Illicit Trafficking' every year?

- [A] 24 June
- [B] 25 June
- [C] 26 June
- [D] 27 June

77. "Order of St. Andrew the Apostle" Award, recently seen in the news, is the highest civilian honour award of which country?

- [A] Australia
- [B] Russia
- [C] France
- [D] Germany

78. Recently, which country has passed its first Climate Change Act, a sweeping law that will set limits for big greenhouse gas emitters?

- [A] Afghanistan
- [B] Myanmar
- [C] South Africa
- [D] Bangladesh

79. What is 'Indian Siris', recently mentioned in news?

- [A] A festival of Northeastern region
- [B] A tropical deciduous tree
- [C] A newly discovered species of Fish
- [D] A species of Lotus

80.. Recently, which state government has approved Logistic Policy 2024 to create five lakhs job opportunities?

- [A] Karnataka
- [B] Assam
- [C] Maharashtra
- [D] Uttar Pradesh

81. What is the name of India's first pollution control vessel recently launched by Indian Coast Guard?

- [A] Sagar Yantra
- [B] Samudra Pratap
- [C] Viksit Bharat
- [D] Samudra Raksha

82.Which day is observed as "International Day of Democracy" annually?

- [A] 15 September
- [B] 16 September
- [C] 17 September
- [D] 18 September

83. Recently, where was the second edition of the 'National Anti Doping Agency (NADA) India Inclusion Conclave' held?

- [A] Chennai
 - [B] Bhopal
 - [C] Hyderabad
 - [D] New Delhi
- Show Answer - D

84.Bodo Napham and Bodo Ondla, which have received the Geographical Indications tag, are from which state?

- [A] Mizoram
- [B] Assam
- [C] Odisha
- [D] Jharkhand

85. The Pinnacles Desert is located in which country?

- [A] Australia
- [B] China
- [C] Morocco
- [D] Russia

86.Which country recently supported India's bid for permanent membership in the UN Security Council?

- [A] Nepal

- [B] Sri Lanka
- [C] Bhutan
- [D] Myanmar

87. As per recent data, which state leads the country in installed capacity for rooftop solar power under the PM Surya Ghar: Muft Bijli Yojana?

- [A] Gujarat
- [B] Rajasthan
- [C] Madhya Pradesh
- [D] Karnataka

88. According to Ministry of Food and Public Distribution, what is the position of India in ethanol production and consumption globally?

- [A] Second
- [B] Third
- [C] Fifth
- [D] First

89. Recently, who won gold medal in men's 5,000 meters race at World Athletics Continental Tour?

- [A] Gulveer Singh
- [B] Prakash Tomar
- [C] Vijendra Sharma
- [D] Yogesh Kumar

90. Which two states recently signed an MoU to deploy trained elephants (Kumki) for controlling elephant menace?

- [A] Bihar and Jharkhand
- [B] Andhra Pradesh and Karnataka
- [C] Uttar Pradesh and Madhya Pradesh
- [D] Gujarat and Rajasthan

91. What is the name of mission recently launched by Ministry of Ports, Shipping, and Waterways to promote cruise tourism in India?

- [A] Kalash mission
- [B] Cruise Bharat Mission
- [C] Samudraya mission
- [D] None of the Above

92. What is the name of the Indian-origin armoured vehicle being assembled in Morocco?

- [A] BMP-2
 - [B] Wheeled Armoured Platform (WhAP)
 - [C] Stryker
 - [D] Sarvatra
- Hide Answer

93. Mona Agarwal recently won a bronze medal in which event at the 2024 Paris Paralympics?

- [A] Table Tennis
- [B] Boxing
- [C] Shooting
- [D] Wrestling

94. Which city of Nepal recently recognized as a 'healthy city' by the World Health Organization?

- [A] Bharatpur
- [B] Biratnagar
- [C] Dhulikhel
- [D] Dharan

95. Recently, where was the '7th Rashtriya Poshan Maah' launched?

- [A] Jaipur, Rajasthan
- [B] Gandhinagar, Gujarat
- [C] Patna, Bihar
- [D] Bhopal, Madhya Pradesh

96. Which poet is considered a national hero in Greece?

- A. John Keats
- B. Lord Byron
- C. Solon
- D. Sappho

97. Which kind of poem is Edward Lear associated with?

- A. Nature
- B. Epics
- C. Sonnets
- D. Nonsense

98. In Coleridge's poem 'The Rime of the Ancient Mariner' where were the three gallants going?

- A. A funeral
- B. A wedding
- C. Market
- D. To the races

99. Harold Nicholson described which poet as 'Very yellow and glum. Perfect manners'?

- A. E. E. Cummings
- B. T. S. Elliot
- C. John Greenleaf Whittier
- D. Walt Whitman

100. What was strange about Emily Dickinson?

- A. She rarely left home
- B. She wrote in code
- C. She never attempted to publish her poetry
- D. She wrote her poems in invisible ink

101. Rupert Brooke wrote his poetry during which conflict?

- A. Boer War
- B. Second World War
- C. Korean War
- D. First World War

102. Which Poet Laureate wrote about a church mouse?

- A. Betjeman
- B. Hughes
- C. Marvel
- D. Larkin

103. Which dialect became Standard English?

- [A] The Northern
- [B] East Midland
- [C] West Midland
- [D] The Southern

Answer: Option [B]

104. The Black Death is also called _____.

- [A] the great plague
- [B] the great flood
- [C] the great drought
- [D] the great revolt

Answer: Option [A]

105. Which author won the 2023 Booker Prize for Fiction?

- a) Salman Rushdie
- b) Eleanor Catton
- c) Paul Lynch
- d) Bernardine Evaristo

Answer: c) Paul Lynch

106. Which book by Margaret Atwood, a sequel to *The Handmaid's Tale*, won the 2019 Booker Prize?

- a) *The Testaments*
- b) *Oryx and Crake*
- c) *The Blind Assassin*
- d) *Alias Grace*

Answer: a) *The Testaments*

107. What is the title of the posthumously published novel by Hilary Mantel, released in 2023?

- a) *The Mirror and the Light*
- b) *The Assassination of Margaret Thatcher*
- c) *The Ghost*
- d) *The Wolf Hall Companion*

Answer: c) *The Ghost*

108. Which renowned author of *Atonement* released the novel *Lessons* in 2022?

- a) Ian McEwan
- b) Julian Barnes
- c) Zadie Smith
- d) Jonathan Coe

Answer: a) Ian McEwan

109. Which 2023 Nobel Prize in Literature winner is known for works focusing on themes of displacement and exile?

- a) Olga Tokarczuk
- b) Abdulrazak Gurnah
- c) Annie Ernaux
- d) Jean-Marie Gustave Le Clézio

Answer: b) Abdulrazak Gurnah

110. Which American poet won the 2023 Pulitzer Prize for Poetry for the collection *Promethean Dreams*?

- a) Jericho Brown
- b) Diane Seuss
- c) Ada Limón
- d) Natalie Diaz

Answer: c) Ada Limón

111. Who was appointed as the UK's new Poet Laureate in 2019, succeeding Carol Ann Duffy?

- a) Simon Armitage
- b) Seamus Heaney
- c) Jackie Kay
- d) Roger McGough

Answer: a) Simon Armitage

112. Which novel by Colson Whitehead won both the Pulitzer Prize and the National Book Award in recent years?

- a) The Underground Railroad
- b) The Nickel Boys
- c) Harlem Shuffle
- d) Apex Hides the Hurt

Answer: a) The Underground Railroad

113. In 2022, which novel by Kazuo Ishiguro was adapted into a feature film titled Living?

- a) Never Let Me Go
- b) The Remains of the Day
- c) Klara and the Sun
- d) The Buried Giant

Answer: b) The Remains of the Day

114. Which author was the recipient of the 2022 Women's Prize for Fiction for her novel The Book of Form and Emptiness?

- a) Ruth Ozeki
- b) Maggie O'Farrell
- c) Ali Smith
- d) Kamila Shamsie

Answer: a) Ruth Ozeki

115. Who won the 2024 Nobel Prize in Literature?

- A) Margaret Atwood
- B) Salman Rushdie
- C) Han Kang
- D) Zadie Smith

Answer: C) Han Kang

116. What is the title of the novel by Han Kang that played a significant role in her winning the Nobel Prize in 2024?

- A) The Vegetarian
- B) Human Acts
- C) Greek Lessons
- D) The White Book

Answer: A) The Vegetarian

117. Who was the Chair of the 2024 Booker Prize judges?

- A) Sara Collins
- B) Justine Jordan
- C) Yiyun Lye
- D) Edmund de Waal

Answer: D) Edmund de Waal

118. What is the primary language in which Han Kang, the 2024 Nobel laureate, writes her works?

- A) English
- B) Korean
- C) Japanese

D) Mandarin

Answer: B) Korean

119. Which book was shortlisted for the 2024 Booker Prize?

A) The Testaments

B) Girl, Woman, Other

C) Prophet Song

D) Shuggie Bain

Answer: C) Prophet Song

120. Which prestigious award for English literature is specifically given to authors from the Commonwealth of Nations?

a) The Man Booker Prize

b) Pulitzer Prize

c) National Book Award

d) Costa Book Awards

Answer: a) The Man Booker Prize

121. Which award recognizes debut authors of the best novel in the UK and Ireland in 2024?

a) Women's Prize for Fiction

b) The Dylan Thomas Prize

c) The Desmond Elliott Prize

d) The Orwell Prize

Answer: c) The Desmond Elliott Prize

122.. The Pulitzer Prize for Fiction in 2024 is awarded to works primarily published in which country?

a) United States

b) United Kingdom

c) Australia

d) Canada

Answer: a) United States

123. Which award, considered one of the top accolades for children's literature, was awarded in 2024?

a) Hugo Award

b) Caldecott Medal

c) Newbery Medal

d) PEN/Faulkner Award

Answer: c) Newbery Medal

124. The Nobel Prize in Literature for 2024 was awarded to a writer from which field?

a) Fiction

b) Non-fiction

c) Poetry

d) Drama

Answer: a) Fiction

125. Which of the following awards in 2024 is known for recognizing the best female author writing in English?

a) The Hugo Award

- b) National Book Critics Circle Award
- c) Women's Prize for Fiction
- d) Booker International Prize

Answer: c) Women's Prize for Fiction

126. In 2024, the Costa Book Awards recognize works from which geographical region?

- a) North America
- b) Europe
- c) United Kingdom and Ireland
- d) Australia

Answer: c) United Kingdom and Ireland

127. The 2024 Hugo Award is primarily focused on which genre of literature?

- a) Historical Fiction
- b) Science Fiction and Fantasy
- c) Crime and Thriller
- d) Non-fiction

Answer: b) Science Fiction and Fantasy

128. Which award is given annually to an author for a lifetime of literary achievement in 2024?

- a) Booker Prize
- b) Nobel Prize in Literature
- c) PEN/Faulkner Award
- d) Neustadt International Prize

Answer: b) Nobel Prize in Literature

129. The 2024 International Dublin Literary Award is open to books written in which category?

- a) English language only
- b) Any language, but available in English translation
- c) Fiction written in Commonwealth countries
- d) Non-fiction in English

Answer: b) Any language, but available in English translation

130. Who wrote Paradise Lost?

- A) Geoffrey Chaucer
- B) John Milton
- C) William Shakespeare
- D) John Donne

Answer: B) John Milton

131. Which novel by George Orwell is a dystopian story about a totalitarian regime?

- A) Animal Farm
- B) 1984
- C) Brave New World
- D) Fahrenheit 451

Answer: B) 1984

132 In Shakespeare's Hamlet, what is Hamlet's relationship to Ophelia?

- A) They are cousins
- B) They are married
- C) She is his lover

D) She is his sister

Answer: C) She is his lover

133. Which Victorian poet wrote the famous poem The Charge of the Light Brigade?

A) Robert Browning

B) Alfred, Lord Tennyson

C) Matthew Arnold

D) Thomas Hardy

Answer: B) Alfred, Lord Tennyson

134. In Jane Austen's Pride and Prejudice, who does Elizabeth Bennet marry?

A) Mr. Wickham

B) Mr. Collins

C) Mr. Darcy

D) Colonel Fitzwilliam

Answer: C) Mr. Darcy

135. Which novel begins with the line, "Call me Ishmael"?

A) The Scarlet Letter

B) Moby-Dick

C) Great Expectations

D) Heart of Darkness

Answer: B) Moby-Dick

136. Who is the author of The Waste Land?

A) W.B. Yeats

B) T.S. Eliot

C) Ezra Pound

D) D.H. Lawrence

Answer: B) T.S. Eliot

137. In The Canterbury Tales, which character tells the first tale?

A) The Knight

B) The Miller

C) The Wife of Bath

D) The Merchant

Answer: A) The Knight

138.. Who wrote Wuthering Heights?

A) Emily Brontë

B) Charlotte Brontë

C) Anne Brontë

D) George Eliot

Answer: A) Emily Brontë

139. In Romeo and Juliet, who kills Mercutio?

A) Romeo

B) Tybalt

C) Paris

D) Benvolio

Answer: B) Tybalt

140. Which of the following works was written by Mary Shelley?

- A) Frankenstein
- B) Dracula
- C) The Picture of Dorian Gray
- D) Wuthering Heights

Answer: A) Frankenstein

141. Who is the protagonist of George Eliot's novel Middlemarch?

- A) Dorothea Brooke
- B) Rosamond Vincy
- C) Esther Summerson
- D) Emma Woodhouse

Answer: A) Dorothea Brooke

142. In Charles Dickens' A Tale of Two Cities, which two cities are referred to in the title?

- A) London and Paris
- B) London and Rome
- C) Paris and New York
- D) Rome and Paris

Answer: A) London and Paris

143. Which literary movement is William Wordsworth associated with?

- A) Romanticism
- B) Realism
- C) Modernism
- D) Postmodernism

Answer: A) Romanticism

144. In Shakespeare's Macbeth, what is the prophecy given to Macbeth by the witches?

- A) He will be king
- B) He will defeat England
- C) He will die in battle
- D) He will marry Lady Macbeth

Answer: A) He will be king

145. In which of these plays does the character Iago appear?

- A) Othello
- B) Hamlet
- C) King Lear
- D) The Tempest

Answer: A) Othello

146. Who wrote the novel Brave New World?

- A) George Orwell
- B) Aldous Huxley
- C) Ray Bradbury
- D) J.G. Ballard

Answer: B) Aldous Huxley

147. In The Great Gatsby by F. Scott Fitzgerald, what is the name of Gatsby's love interest?

- A) Myrtle Wilson

B) Daisy Buchanan

C) Jordan Baker

D) Catherine Wilson

Answer: B) Daisy Buchanan

148. Which novel features the characters Pip, Estella, and Miss Havisham?

A) Great Expectations

B) Oliver Twist

C) Bleak House

D) David Copperfield

Answer: A) Great Expectations

149. Who wrote the play Waiting for Godot?

A) Harold Pinter

B) Samuel Beckett

C) Tom Stoppard

D) Arthur Miller

Answer: B) Samuel Beckett

Answer Key:

1. Answer: The Preface to the second edition of the Lyrical Ballads

2. Answer: Tintern Abbey

3. Answer: Because it was the year in which Wordsworth's Lyrical Ballads were published

4. Answer: Lake Districts

5. Answer: Milton

6. Answer: Tintern Abbey

7. Answer: Robert Southey

8. Answer: 37

9. Answer: Robert Greene

10. Answer: Robert Greene

11. Answer: Ben Jonson

12. Answer: Ruskin

13. Answer: Tempest

14. Answer: A river on the bank of which Stratford was situated

15. Answer: Nahun Tate

16. Answer: Cleopatra

17. Answer: Cymbeline

18. Answer: Samuel Butler

19. Answer: Coleridge

20. Answer: The Tempest

21. Answer: As You Like It

22. Answer: Hamlet

23. Answer: Anglo-Irish poet

24. Answer: A drama in One Act
 25. Answer: A Collection of essays
 26. Answer: The Untilled Field
 27. Answer: An autobiographical treatise
 28. Answer: The Second Coming
 29. Answer: Quarterly Review
 30. Answer: As an apprentice to an apothecary
 31. Answer: Disease of consumption
 32. Answer: Titans and Olympians
 33. Answer: A serpent-woman
 34. Answer: Lorenzo
 35. Answer: Shelley
 36. Answer: Shelley
 37. Answer: A critical treatise on dramatic art developed through dialogues
 38. Answer: Leslie
 39. Answer: Neander
 40. Answer: Love's Labour's Lost
 41. Answer: Chaucer
 42. Answer: Antony and Cleopatra
 43. Answer: Defence of Roman Catholicism
 44. Answer: Shaftesbury
 45. Answer: John Dryden
 46. Answer: Dr. Johnson
 47. Answer: Heroic plays
 48. Answer: Absalom and Achitophel
 49. Answer: Ezra Pound
 50. Answer: Jean Verdenal
 51). C 52). A 53). C 54). D 55). B 56). A 57). A 58). B
 59). C 60). C 61). B. 62). C 63). B. 64). A 65). A. 66). A 67). A. 68). A 69). A 70). C 71). A. 72). D
 73). B 74). A 75). A
 76). C 77). B 78). C 79). B 80). c 81). b 82). A. 83). D
 84). B 85). A 86). C. 87). A 88). B 89). A 90). B
 91). b 92). B 93). C 94). C 95). B
 96. Lord Byron
 97. Noncense
 98. A Wedding
 99. T S Eliot
 100. She rarely left home
 102.
 First War
 103. Betjeman
 104. East Midland
 105. The great plague
 106. Paul Lynch

107.The Testaments
108.The Ghost
109.Ian McEwan
110.Abdulrazak Gurnah
111.Eda Limon
112.Simon Armitage
113.The underground railroad
114.The Remains of the day
115.Ruth Ozike
116.Han Kang
117.The Vegetarian
118.Edward de Waal
119.Korean
120.Prophet song
121.The Man Booker Prize
122.The Desmond Elliott Prize
123.United States
124.Newbery Medal
125.Fiction
126.Women's Prize for Fiction
127.United States and Ireland
128.Science fiction and fantasy
129.Noble Prize in Literature
130.Any language but available in English Translation
131.John Milton
132.1984
133.She is his lover
134.Alfred Lord Tennyson
135.Mr. Darcy
136.Moby Dick
137.T.S Eliot
138.The Night
139.Emily Bronte
140.Tybolt
141.Frankenstein
142.Doreathe Brook
143.London and Paris
144.Romanticism
145. He will be King
146.Othello
147. Aldous Huxley
148.Daisy Buchanan
149. Great Expectations
150. Samuel Beckett

Subject - Textile Science- 1		
Sr. No.	Ques. Type	Questions
1	long	classify fibres on the basis of the basis of their origin? Explain diff. types of manmade fibres?
2	"	what do you understand by cellulosic fibres? Explain the manufacturing and properties of cotton.
3	"	describe the manufacture of viscose rayon. Give properties and uses.
4	"	what are re-generated cellulosic fibres? Explain physical and chemical properties of any one re-generated cellulosic fabric?
5	"	differentiate between the wet dry and melt dry?
6	"	define yarns. Explain novelty yarns with the help of diagram.
7	"	wrie in detail about various textured yarns?
8	"	how are yarns classified? Explain yarn twist and yarn count.
9	short	weighting of silk
10	"	types of wool
11	"	degumming of thrown silk
12	"	ginning
13	"	cabled yarns
14	"	Z and S twist
15	"	filament yarns
16	"	composition of cotton
17	"	cultivatd of mulberry silk
18	"	difference between woolen and worsted
19	"	about loom


 Neelam
 HOD
 Deptt. Of Fashion Tech.
 Guru Nanak College
 Bhada (Mansa)

Department- Fashion Technology and Home Science
CLASS- II.Voc (FT) (sem.2)
Paper – Concepts of Fashion
(Question bank)

1. Discuss the effect of occupation and season on the selection of clothing?
2. What points you will keep in mind while buying clothes for infants?
3. What are the factors that need to be considered in the selection of clothing?
4. Discuss the selection of clothes for adults?
5. How does clothing affect the social and psychological life of person?
6. Adolescents 'clothing requirements are different?
7. Style is an important factor in the choice of clothing by adolescents?
8. Clothing contributes to health and safety?
9. What do you mean by fashion cycle? Explain the stages its passes through?
10. What do you mean by fashion and fad? How are they different from each other?
11. What is style? How it become classic?
12. Classification of fashion?
13. What is fashion and its principle?
14. What are the factors influencing fashion?
15. Describe the source of inspiration for fashion designer?
16. What are brand forecasting and their influences?
17. What are the different theories of fashion adaption?

(Short notes)

1. What is fashion?
2. Explain the fashion cycle?
3. Style?
4. Fad?
5. Classic fashion
6. Trend
7. What is high fashion?
8. Explain the designer?
9. Mass fashion?
10. What is display?
11. What are accessories?
12. Explain term vogue?
13. Ready to wear?
14. Fashion show?


Nirula
Head
Dept. Of Fashion Tech.
Guru Nanak College
Mithala (Bansga)

Question Bank

Paper- Fundamental of Design

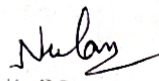
1. What are the warm and cool color ? Difference the two ?
2. What are the relationship between primary and secondary colors ? Illustrate.
3. What is analogous color harmony ? Illustrate.
4. Name the factors influencing the choice of color in clothes.
5. What is the effect of colors in garment ?
6. What are the elements of Design ?
7. What is the silhouette ? Name the different silhouette. Illustrate any three.
8. What are the three properties of color ?
9. What is the Texture ? What are the types of texture ?
10. Name the different principles of design.
11. How can rhythm be brought about in a dress ?
12. What is collage, Explain its types ?
13. Illustrate a worsted and leather Fabric compare the two.
14. Textures effect the look. Comfort in dress. If so explain how.
15. What is design concept ? How understanding of dots line ? Carves help in designing of clothes ?
16. Draw and explain the colorwheel. Write technique of color mixing.
17. How collage is helpful in fashion designing ? Explain different types of collage in detail.
18. What do you understand by dimensions of color ? Explain various color scheme with the help of suitable example.
19. What do you understand by design concept ? Explain different types of college in detail.
20. As a Fashion designer, how would you rate green colour ?
21. Why is blue colour suitable for uniform ?

1. Primary Color
2. Secondary Color


Head
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(M. H. N. S. Road)

Question Bank
Paper- Fundamental of Design

1. What is the importance of elements of Design in clothing? Explain any two of these by giving examples.
2. Describe the role of principal of art in clothing.
3. How can you create balance proportion and harmony in a design using lines and colours.
4. What are different types of textures? How do different textures effect the personality the wears.
5. What are the six standard colour?
6. The Names of three tertiary colours are.
7. Why is it important for student of Fashion designing study colour?
8. Describe the Intensity dimension of colour.
9. What is the relationship between primary and secondary colour? Illustrate.
10. What is a silhouette? Name the different silhouette.
11. Shape is an important element of Design comment.
12. What is a silhouette? Name the different silhouettes, illustrate any three.
13. What is a texture? What are the type of textures?
14. What are the principal of design?
15. Name the different principals of Design?
16. How can dominance principal of design b used in a dress?


Nulay Head
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Mumbai (Maharashtra)

SUBJECT - Research methodology

(QUESTION BANK)

Q1. What do you mean by research ? explain its objects.

Q2. Differentiate between primary and secondary data ? illustrate questionnaire method of data collection ?

Q3. Why random sampling preferred in comparison to non random sampling ? explain the procedure of selecting a simple random method

Q4. Describe in brief the payout of research report covering all points ?

Q5. What point will you keep in mind while preparing a research report ?

Q6. Explain significance and objective of research ?

Q7. Write note on qualitative and quantitative variables ?

Q8. Define cluster sampling ?

Q9. Write a note on rating scale ?

Q10 Write a note on hypothesis ?

Q11. Different steps in report writing ?

Q12. What is report writing ?

Q13. Explain concepts and types of variables ?

Q14. What do you mean by research ? explain its objective ?

Q15. Explain the meaning of the following context of research

- a. Describe and continuous variables
- b. Dependent and independent
- c. Give suitable examples

Q16. Explain experimental and survey types of research by giving alternative examples ?

Q17. What is research design ? state its importance . what are the features of good research design ?

Q18. Explain the following concepts related to research design:

- a. Dependent and independent variables .
- b. Qualitative and quantitative variables

Q19. What is questionnaire ? discuss the main aspects of questionnaire ?

Q20 write a note on the merits and demerits of observation method in collecting data ?

- a. Define sampling . state why sampling is used in research studies ? state reason .
- b. Distinguish between random sampling and non random sampling ?

Nulany
Dept. Of Fashion Tech.
Guru Tegh Bahadur College
Gurgaon (Haryana)

Department- Fashion Technology and Home Science

CLASS- B.voc (ft) (sem. 5th)

Paper – History of World Costumes

(Question bank)

1. Main garments worn by males and females of Greek period?
2. Explain with illustration about the costumes worn during roman period?
3. Define the Egypt period?
4. Explain byzantinim men and women costumes and textiles and accessories?
5. Illustrate and explain various garments, jewellery and head dress worn by men and women?
6. Define women's romantic dress?
7. Explain women and men's crinoline dresses?
8. Explain French period?
9. Explain Italy costumes?
10. Discuss French costumes in detail?
11. Write a detail note on empire period?
12. Discuss English costumes during early middle ages, late middle ages?
13. Explain costumes of Rome with the help of suitable examples?
14. Explain the women costumes, footwear's accessories during crinoline period?
15. Explain the changes that have occurred in male and female's costumes during the baroque period?
16. Discuss costumes used in romantic period?
17. Explain the women costumes, footwear's accessories during bustle period?

Nalwa
Head
Dept. Of Fashion Tech.
Guru Nanak College
Maha(Mansa)

Question Bank

History of world Costumes

1. Amulet
2. Corsepet: Body armor for the torso
3. Het: The white bowling -pin-shaped crown as the upper kingdom
4. Kalasres: Long skirt
5. Kohl: Powdered Black are as lead used in preparing eyeliner
6. Pectaral: Wide jeweled collar that sometimes extends over the shoulders; worn by both men and women.
7. Pschent: The red cylindrical crown as the lower kingdom.
8. Schenti: Kiet-like skirt
9. Hasa: Tight-sitting, circular wovenhose
10. Kalumaukion: Atall cylindrical priest's headdress as the eastern church.
11. Lappets: Flaps as fabric at the side as a priest's hat or headdress
12. Larum: An oranmental ritual scars worn by by By dentine emperors as the late midd dages.
13. Maniple: Narrow scars pinned or draped bover the lest sarearm as Lation ecclesiastical garments.
14. Pendoupia: Pendants attached to gold chains with pearls and precious stones assixed to the base as the crown
15. Phenolion: The eastern version as the chasuble cut shorter in the srontsor rariet arm movement
16. Samiter: A thick, shiss silk textile, osten interwoven with gold threads.
17. Scapular: A long, apron-like piece as sabric that sit over the shoulders and loosly draped down the pront and back as a monk's nun shabit
18. Stole: Along strip material draped variously around the shoulders as the outer mast component as early ecclesiastical castumas.
19. Tapestry darning: A method as weaving in which a pattern is darned in and out as the warp

Class = B.A. Ist Sem Ist
Subject - Fabric Study and Design Concept
ਪ੍ਰਸ਼ਨ ਬੈਂਕ

ਛੋਟੇ ਪ੍ਰਸ਼ਨ :-

1. ਇੰਚੀਟੇਪ ਦੀ ਕੱਪੜਿਆਂ ਲਈ ਕੀ ਮਹੱਤਤਾ ਹੈ ?
2. ਪਿੰਨ ਕੁਸ਼ਨ ਕਿਸਨੂੰ ਕਹਿੰਦੇ ਹਨ ?
3. ਹੈਮ ਮਾਰਕਰ ਕੀ ਹੈ ?
4. ਫਰੈਂਚ ਕਰਵ ਦਾ ਕੱਪੜਿਆਂ ਵਿੱਚ ਕੀ ਰੋਲ ਹੈ ?
5. ਟਰੇਸਿੰਗ ਵੀਲ ਤੋਂ ਕੀ ਭਾਵ ਹੈ ?
6. ਡਰੈੱਸ ਮੇਕਰ ਸੀਜ਼ਰ ਕਿਹੜੀ ਹੁੰਦੀ ਹੈ ?
7. ਪਿਕਿੰਗ ਸੀਜ਼ਰ ਬਾਰੇ ਦੱਸੋ ?
8. ਸਲਾਈ ਮਸ਼ੀਨ ਬਾਰੇ ਦੱਸੋ ?
9. ਕਢਾਈ ਵਾਲੀ ਅਤੇ ਸਿਲਾਈ ਵਾਲੀ ਸੂਈ ਵਿੱਚ ਕੀ ਫਰਕ ਹੁੰਦਾ ਹੈ ?
10. ਟਪੈਸਟਰੀ ਵਾਲੀਆਂ ਸੂਈਆਂ ਕੀ ਹੁੰਦੀਆਂ ਹਨ ?
11. ਸਿਲਾਈ ਵਿੱਚ ਖਿੰਬਲ ਦਾ ਕੀ ਰੋਲ ਹੈ ?
12. ਸਿਲਾਈ ਵਿੱਚ ਪ੍ਰੈਸ ਦੀ ਲੋੜ ਕਿਉਂ ਪੈਂਦੀ ਹੈ ?
13. ਪ੍ਰੈਸ ਮਿਟ ਬਾਰੇ ਦੱਸੋ ।
14. ਸਿਲਾਈ ਮਸ਼ੀਨਾਂ ਕਿੰਨੇ ਤਰ੍ਹਾਂ ਦੀਆਂ ਹੁੰਦੀਆਂ ਹਨ ?
15. ਸਿਲਾਈ ਮਸ਼ੀਨ ਖਰੀਦਦੇ ਸਮੇਂ ਕਿਹੜੀਆਂ ਗੱਲਾਂ ਦਾ ਧਿਆਨ ਰੱਖਣਾ ਪੈਂਦਾ ਹੈ ?
16. ਸਿਲਾਈ ਮਸ਼ੀਨ ਦੀ ਸੰਭਾਲ ਕਰਨਾ ਕਿਉਂ ਜ਼ਰੂਰੀ ਹੈ ?
17. ਸਿਲਾਈ ਮਸ਼ੀਨ ਨੂੰ ਤੇਲ ਦੇਣਾ ਕਿਉਂ ਜ਼ਰੂਰੀ ਹੈ ?
18. ਐਥਰੋਪੇਮੀਟਰੀ ਤੋਂ ਕੀ ਭਾਵ ਹੈ ?
19. ਲੰਬਾਈ ਦੇ ਨਾਪਾਂ ਤੋਂ ਕੀ ਭਾਵ ਹੈ ?
20. ਚੌੜਾਈ ਦੇ ਨਾਪ ਤੋਂ ਕੀ ਭਾਵ ਹੈ ?
21. ਸੀਮਾ ਚਿੰਨ੍ਹ ਕੀ ਹੁੰਦੇ ਹਨ ?
22. ਸੀਮ ਅਲਾਊਂਸ ਤੋਂ ਕੀ ਭਾਵ ਹੈ ?
23. ਢਿੱਲ ਤੋਂ ਕੀ ਭਾਵ ਹੈ ?
24. ਡਰਾਫਟਿੰਗ ਤੋਂ ਕੀ ਭਾਵ ਹੈ ?
25. ਕੱਪੜੇ ਦਾ ਗਰੇਨ ਕੀ ਹੈ ?

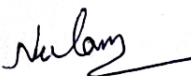
Nulay
Head
Deptt. Of Fashion Tech.
Guru Nanak College
Jalandhar (Punjab)

Class = B.Voc. Garment Designing Ist, Sem IIIrd
Subject = Conceptual Studies of Fashion

Short Note:-

Question Bank

1. What is Fashion ?
2. What is Fashion Cycles ?
3. Fad Fashion ?
4. Classic
5. Style
6. What is Layette ?
7. Influence of religion on clothing .
8. Mass Fashion ?
9. What is Fashion cycle length ?
10. Fashion forecast ?
11. Haute Couture ?
12. Influence of Culture on clothing ?
13. Explain the profile collection of any one International Designer ?
14. What are the two factors which influence fashion.
15. Trendies ?
16. What are fashion adaption theories ?
17. What is trickle down theory ?
18. What is trickle across theory ?
19. What is trickle up theory ?
20. Who is designer ?
21. What is baby sleeping suit ?
22. What is the affect of age on fashion ?
23. What is the affect of season on fashion ?
24. What is the affect of Budget on fashion ?
25. What is the affect of occupation on Fashion ?
26. Craze for Fads in teenagers.


Head
Dept. Of Fashion Tech.
Guru Nanak College
Maddur (Mandya)

Class - B.Voc. Garment Designing 2nd, Sem Ist
Subject - Historic costumes

Question Bank

Short Questions :-

1. Define Indus Valley Civilization.
2. Name any two ornaments worn during Vedic Period.
3. What is Chugha ?
4. Define Antariya
5. Briefly write about Sunga Period.
6. Name two main costumes used by women in Kushan Period.
7. Write about the Kachcha Style.
8. Define Draped Garment
9. Define Angarkha
10. What is Karnika
11. Farshi
12. Dupatta
13. Ghagra
14. Patka
15. Define Kayaband
16. What is Nupura
17. Karnika
18. Define Pagi
19. Tunic
20. Mention any two Common fabric wear in ancient costumes of India.
21. Define sari
22. Stanamsuka
23. Hair style during satvahana period.
24. Name colors used in British period costumes
25. Define Angrakha
26. Name any two upper garment of Mauryan Period.
27. Women hair style of Gupta Period.
28. Foot wear of Punjab
29. Ornament of Jammu and Kashmir
30. Lower Garment of Maharashtra
31. Define medieval Period.
32. Men costumes of Gandhara Period.
33. Explain Vttariya
34. Swadeshi
35. Essence of Khadi movement .
36. Valaya and Kintini
37. Hair style of Indus Valley people
38. Goddies
39. Chola Dora
40. Phulan

Nulens
Dept. Of Fashion Tech.
Guru Jyoti College
Jaipur (Raj.)

Maninder Kaur

class - B.voc. Garment Designing 3rd Sem.
Subject - Indian Traditional Textiles

Question Bank

Short Note:-

1. Define Tie -Dye Technique? Give two Examples.
2. What is the reason for decline in the number of Artisans practicing the craft of Patola ?
3. Name of the four major centres of Bandhani in Gujrat?
4. How is a constant flow of Dye Maintained in the Kalam While doing Kalamkari?
5. Pipli applique work is being put to various end uses. Name them.
6. Explain the Technique of Producing a Phulkari?
7. Name the four main Stitches employed for Kasuti Embroidery?
8. What is Gamocha?
9. Ikat can be classified into three categories on the basis of production Technique?
10. Define Traditional Embroidery?
11. How Colour Matifs and Production Process of Patola Sari is made Explain?
12. What is the Importance of Traditional Textile in India?
13. Describe the Matifs used in Chamba Rumaal?
14. Bitik Dye?
15. Features of Kutch Work?
16. Themes of Madhubani Paintings?
17. Types of Kantha?
18. Pochampalli?
19. Matifs of Sangneri Printing?
20. Baluchri Sarec-Border and Pallu.
21. History of Maheshwari Saree?
22. Types of Patola?
23. Colour in Jamdani?
24. Block Printing?
25. Kanjivaran?
26. Pitambar?
27. Banjara Embroidery?
28. Traditional textiles Of Kerela?
29. Define Telia Rumaal? .
30. Mashru?
31. Screen Peinting?
32. Motifs of Pathani Sarees?
33. Colours in Bagh?
34. Border and Pallu of Ikat Sarees?
35. Famous Block Printing Centres in India?
36. Chikankari?
37. Difference between Maenthi and Murgi?
38. Kashmir Shawls?
39. Lehria?
40. Baluchu Saree?

Nulom
Dept. Of Fashion Tech.
Guru Nanak College
Gurgaon (Haryana)

Class = B. Voc. Garment Designing. Ist sem Ist
Subject = Basics of Garment Construction

Question Bank

Short Note

1. What is sewing machine ?
2. Write about measuring tape ?
3. What is tracing wheel ?
4. What is the difference between scissors and shears ?
5. Write about pinking scissors ?
6. What is Brown Paper ?
7. What is the Difference between hand sewing needles and machine needles ?
8. What is presser foot ?
9. What is anthropometry ?
10. Classify the body measurement's ?
11. What point will consider while taking body measurements ?
12. What is seam allowance ?
13. Write about warp yarn
14. What do you mean by grain perfection ?
15. Why pre-shrinking of the fabric is important ?
16. What is drafting ?
17. What is template ?
18. What points should be considered while using paper patterns ?
19. What is notches ?
20. How many types of Dart ?
21. Write about Knife pleats ?
22. Write about gathers ?
23. What is pin tucks ?
24. Write about run and fell seam ?
25. What is ironing table ?
26. Difference between pins and pin cushions
27. What is thread clipper ?
28. Write about power driven machine ?
29. What is French curve ?
30. Paper patterns .
31. Yokes
32. Fasteners

Nulay
Dept. Of Fashion Tech.
Guru Tegh College
Gurgaon (Haryana)

Question bank (History)

2022-23

1 DISCUSS THE EFFECTS OF A PHYSICAL FEATURES OF INDIA ON CRITICAL AND SOCIAL LIFE OF ANCIENT INDIA.

2 Describe the physical features of India and examine there in person the course of its History.

3 Daag different sources of Ancient Indian History.

4 Exam in the impact of the physical features of india on and sent indian History.

5 What to do you know about the the salient features of Indus Valley Civilization.

6 Discuss the origin and extent of Indus Valley Civilization.

7 Describe the Himalaya. How did it influence Indian History.

8 Describe the political, economic and social effects of indian Geography on its History.

9 What to do you know about the town planning of Indus Valley peoples ?

10 Explain the achievements of the Harappan people in the field of town planning.

11 What to do you know about the town planning, art and Religion of the Indus Valley Civilization ?

12 Describe the social,economic, and political life of the Indus Valley Civilization.

What to do you know about Indus Valley people ?

13 Discuss main features of Harappan culture.

14 Give brief account of Indus Valley Civilization. What were the causes of its decline ?

15 Point out of the different between Indus Valley Civilization and Vedic Civilization.

16 Explain the main features of latter Vedic period.

17 Describe the social economic and religious life of the latter vedic people.

18 Study the political and social organisation of the Aryans in the latter Vedic Age.

19 What do you mean by Ashram System ?

20 Give a brief account of the legacy of the Aryans.

21 Point out the main differences between the Rigvedic Civilization and Later Vedic Civilization.

22 Causes of the origin of Jainism and Buddhism.

23 What was the political social and economic condition of india on the eve of birth of Buddhism and Jainism ?

24 Discuss the career and teaching of Lord Mahavira

25 Who was Fahien ? What does he tell us about Chandragupta II ?

26 Who were the Hunas ? Give a brief account of their invasions of India and their effects.

27 Discuss the causes of the decline of Gupta Empire.

- 28 Give an account of the Administration of Gupta rulers.
 - 29 Write a critical note on the Gupta Administration.
 - 30 Give an account of early career and achievements of Harshavardhan.
 - 31 Study the civil and military administration of Harsha.
 - 32 Write a note on Nalanda University.
 - 33 Discuss the religious policy of Harshavardhan.
 - 34 Narrate the account of Hieun-Tsang about India.
 - 34 Describe the History of Rashtrakutas.
 - 35 Write a note of Chalukyas.
 - 36 Discuss the rise and fall of the Cholas.
 - 37 Write an essay on the origin of the Rajputs.
 - 38 What do you know about the Civilization and Culture of the Rajputs?
 - 39 What steps were taken by Ashoka for the spread of Buddhism ?
 - 40 Was Ashoka a great monarch?
 - 41 What were the reasons for the fall of the Mughal Empire?
 - 42 Explain the significance of the establishment of the Khalsa Panth.
 - 43 What was the impact of the Jaliwale Bagh incident?
 - 44 Explain the Regulating Act.
 - 45 Write a note on Treaty of Versailles.
- Describe the works of Balaji Vishwanath.
46. Write about the causes, events and significance of the First Karnataka War.
 - 47 What do you know about the nature of history?
 - 48 Describe the victories of Maharaja Ranjit Singh.
 - 49 write a short note on Gadar movement.
 - 50 Explain the achievements of Arya Samaj and Singh Sabha.

Question Bank

PG Department of Music

1. What is Swara ?
2. How many types of Naad?
3. How many beats are in teentaal?
4. Date of birth and place of birth of great master Pt. Vishnu Narayan Bhatkhande.
5. Write down the swaras of Raag Bilawal.
6. How many komal swaras are used in Raag Bhairavi? Write down about all komal swaras which are used in Raag Bhairavi?
7. What is classical music?
8. How many saptaks are there in Indian classical music?
9. Write Raag Bhairav's swaras.
10. Write Raag Malkaus's swaras.
11. How many beats in Jhaptaal?
12. How many beats in Deepchandi?
13. On which matra Jhaptaal's sum?
14. Raag Bhairav's thaat
15. Raag Malkaus's jaati
16. Raag Malkaus's thaat?
17. What is the singing time of Raag Bhairav?
18. What is the singing time of Raag Kalyan?
19. What is the singing time of Raag Bilawal?
20. What is the singing time of Raag Malkaus?
21. Discuss elementary knowledge of Raga - Gunkali.

22. Write brief answers of the following:
23. Define Grah.
24. When was Ustad Faiyaz Khan born?
25. Define Taal.
26. Write down the mukh swar sangiti of Raga Bihag.
27. How many matras and vibhags are in Jhap Taal?
28. Write down the Granth written by Matang.?
29. Write down vadi and samvadi swar's of Raga Gunkali
30. What is the Gayan Gharana of Krishan Rao Shankar Pandit?
31. Name any four Musical Instruments of Punjab.
32. Define Tappa.
33. How many total Matras are in Teevra Taal?
34. What are the Vadi and Samvadi of Bihag Raga?
35. Who introduced Indian Notation System of Hindustani Music?
36. What are the main Swar's (Mukh Swar Sangiti) of Raga - Maru Bihag?
37. Who is the inventor of tappa gyaan shaili.?
38. Who is the inventor of Tarana gyaan shaili?
39. Who is inventor of thumri Gyaan shaili?
40. How many Swars are in one saptak?

ਐਮ ਏ ਪੰਜਾਬੀ ਭਾਗ-ਦੂਜਾ

ਪਰਚਾ ਪਹਿਲਾ: ਭਾਸ਼ਾ ਵਿਗਿਆਨ ਤੇ ਪੰਜਾਬੀ ਭਾਸ਼ਾ

1. ਭਾਸ਼ਾ ਦੀ ਪਰਿਭਾਸ਼ਾ ਦਿੰਦੇ ਹੋਏ ਇਸ ਦੀਆਂ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ ਬਾਰੇ ਚਰਚਾ ਕਰੋ।
2. ਭਾਸ਼ਾ ਦੀਆਂ ਪ੍ਰਮੁੱਖ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ ਦੱਸੋ।
3. ਹਾਕਟ ਅਨੁਸਾਰ ਭਾਸ਼ਾ ਦੇ ਕਿਹੜੇ-ਕਿਹੜੇ ਜ਼ਰੂਰੀ ਗੁਣ ਹਨ?
4. ਭਾਸ਼ਾ ਵਿਗਿਆਨ ਨੂੰ ਪਰਿਭਾਸ਼ਤ ਕਰੋ।
5. ਭਾਸ਼ਾ ਵਿਗਿਆਨ ਦੇ ਇਤਿਹਾਸਕ ਵਿਕਾਸ ਨੂੰ ਬਿਆਨ ਕਰੋ?
6. ਸਾਹਿਤ ਦੇ ਬੁਨਿਆਦੀ ਭਾਸ਼ਾਈ ਸੰਕਲਪਾਂ ਬਾਰੇ ਦੱਸੋ।
7. ਚਿਹਨ ਨੂੰ ਪਰਿਭਾਸ਼ਤ ਕਰਦੇ ਹੋਏ ਇਸ ਦੀਆਂ ਕਿਸਮਾਂ ਦੱਸੋ।
8. ਲਾਂਗ ਤੇ ਪੈਰੋਲ ਵਿੱਚ ਕੀ ਅੰਤਰ ਹੁੰਦਾ ਹੈ?
9. ਇਕਾਲਿਕ ਅਤੇ ਦੁਕਾਲਿਕ ਅਧਿਐਨ ਵਿੱਚ ਫ਼ਰਕ ਬਾਰੇ ਵਰਣਨ ਕਰੋ?
10. ਲੜੀਦਾਰ ਤੇ ਕੜੀਦਾਰ ਸਬੰਧ ਕੀ ਹੁੰਦੇ ਹਨ?
11. ਨੌਮ ਚੌਮਸਕੀ ਦੇ ਵਾਕੰਸ਼ ਉਸਾਰੀ ਨੇਮ ਬਾਰੇ ਚਰਚਾ ਕਰੋ।
12. ਰਪਾਂਤਰੀ ਵਿਆਕਰਨ ਦੇ ਕੀ ਨੇਮ ਹਨ?
13. ਨੌਮ ਚੌਮਸਕੀ ਅਨੁਸਾਰ ਸਮਰੱਥਾ ਤੇ ਨਿਭਾਉ ਕੀ ਹੈ?
14. ਰੋਮਨ ਯੈਕਬਸਨ ਅਨੁਸਾਰ ਰੂਪਕ ਕੀ ਹੈ?
15. ਭਾਸ਼ਾ-ਸੰਜਮਤਾ ਦਾ ਕੀ ਸਿਧਾਂਤ ਹੈ?
16. ਸੰਸਾਰ ਭਾਸ਼ਾ-ਪਰਿਵਾਰ ਦੇ ਵਰਗੀਕਰਨ ਦੇ ਆਧਾਰ ਕੀ ਹਨ?
17. ਸਤਮ ਤੇ ਕੇਂਟਮ ਵਰਗ ਕੀ ਹੈ?
18. ਭਾਰੋਪੀ ਭਾਸ਼ਾ ਪਰਿਵਾਰ ਦਾ ਵਰਣਨ ਕਰੋ।
19. ਆਰੀਆ ਭਾਸ਼ਾ ਪਰਿਵਾਰ ਦਾ ਵਰਣਨ ਕਰੋ।
20. ਆਧੁਨਿਕ ਭਾਰਤੀ ਭਾਸ਼ਾਵਾਂ ਬਾਰੇ ਵਰਣਨ ਕਰੋ।
21. ਦ੍ਰਵੜ ਭਾਸ਼ਾ ਪਰਿਵਾਰ
22. ਦਰਦ ਭਾਸ਼ਾ ਪਰਿਵਾਰ
23. ਸਾਮੀ ਭਾਸ਼ਾ ਪਰਿਵਾਰ
24. ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦਾ ਨਿਕਾਸ ਤੇ ਵਿਕਾਸ ਵਰਣਨ ਕਰੋ।
25. ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦੇ ਵਿਕਾਸ ਪੜਾਅਾਂ ਜ਼ਿਕਰ ਕਰੋ।
26. ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦਾ ਸੰਸਕ੍ਰਿਤ ਨਾਲ ਸਬੰਧ

27. ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦਾ ਹਿੰਦੀ ਨਾਲ ਸਬੰਧ
28. ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦਾ ਅੰਗਰੇਜ਼ੀ ਨਾਲ ਸਬੰਧ
29. ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦਾ ਫ਼ਾਰਸੀ ਨਾਲ ਸਬੰਧ
30. ਸਮਾਜ ਭਾਸ਼ਾ ਵਿਗਿਆਨ ਤੋਂ ਕੀ ਭਾਵ ਹੈ?
31. ਪਿਜ਼ਿਨ ਤੇ ਕਰਿਓਲ ਭਾਸ਼ਾ ਵਿੱਚ ਫ਼ਰਕ ਦੱਸੋ?
32. ਡਾਇਗਲੋਸੀਆ ਕੀ ਹੈ?
33. ਉਪਭਾਸ਼ਾ-ਸ਼ਾਸਤਰ ਨੂੰ ਪਰਿਭਾਸ਼ਤ ਕਰੋ?
34. ਭਾਸ਼ਾ-ਰੇਖਾਵਾ ਤੋਂ ਕੀ ਭਾਵ ਹੈ
35. ਭਾਸ਼ਾ ਆਪਹੁਦਰੀ ਹੁੰਦੀ ਹੈ' ਇਸ ਕਥਨ ਨੂੰ ਸਪੱਸ਼ਟ ਕਰੋ।
36. ਇਤਿਹਾਸਕ ਭਾਸ਼ਾ ਵਿਗਿਆਨ ਦਾ ਸੰਖੇਪ ਇਤਿਹਾਸ ਦੱਸੋ।
37. ਰਜਿਸਟਰ ਭਾਸ਼ਾ, ਜਿੰ
38. ਪੰਜਾਬੀ ਦੀਆਂ ਉਪਭਾਸ਼ਾਵਾ ਬਾਰੇ ਚਰਚਾ ਕਰੋ।
39. ਧੁਨੀ ਵਿਗਿਆਨ ਨੂੰ ਪਰਿਭਾਸ਼ਤ ਕਰੋ?
40. ਧੁਨੀ ਵਿਗਿਆਨ ਦੀਆਂ ਕਿਸਮਾਂ ਦੱਸੋ।
41. ਪੰਜਾਬੀ ਧੁਨੀ ਵਿਉਂਤ ਬਾਰੇ ਚਰਚਾ ਕਰੋ।
42. ਭਾਵੰਸ਼ ਕੀ ਹੁੰਦਾ ਹੈ?
43. ਵਧੇਤਰ ਕੀ ਹੁੰਦਾ ਹੈ?
44. ਪੰਜਾਬੀ ਵਾਕੰਸ਼ ਬਣਤਰ ਬਾਰੇ ਵਰਣਨ ਕਰੋ।
45. ਪੰਜਾਬੀ ਉਪਵਾਕ ਦੀ ਬਣਤਰ ਦੱਸੋ।
46. ਪੰਜਾਬੀ ਵਾਕ ਦੀ ਬਣਤਰ ਦੱਸੋ?
47. ਭਾਰਤੀ ਅਰਥ ਵਿਗਿਆਨ ਦੀ ਪਰੰਪਰਾ ਬਾਰੇ ਵਰਣਨ ਕਰੋ।

ਐਮ ਏ ਪੰਜਾਬੀ ਭਾਗ-ਦੂਜਾ
ਪਰਚਾ ਤੀਜਾ- ਵਿਸ਼ਾ: ਗੁਰਮਤਿ ਕਾਵਿ

- 1 .ਡਾ. ਵਜ਼ੀਰ ਸਿੰਘ ਦੁਆਰਾ ‘ਗੁਰਮਤਿ ਕਾਵਿ ਦੇ ਦਾਰਸ਼ਨਿਕ ਪਿਛੋਕੜ’ ਅਧੀਨ ਕਿਨ੍ਹਾਂ-ਕਿਨ੍ਹਾਂ ਦਾਰਸ਼ਨਿਕ ਸੰਕਲਪਾਂ ਨੂੰ ਉਭਾਰਿਆ ਹੈ?
2. ਸਿੱਖ ਕੀਮਤ ਮੀਮਾਂਸਾ ਲੇਖ ਵਿਚ ਕਿਹੜੇ -ਕਿਹੜੇ ਕੀਮਤ ਸਿਧਾਂਤਾਂ ਨੂੰ ਦਰਸਾਇਆ ਗਿਆ ਹੈ?
3. ਗੁਰਮਤਿ ਕਾਵਿ ਦੇ ਪ੍ਰਮੁੱਖ ਸੰਕਲਪ ਤੇ ਸਿਧਾਂਤਾਂ ਦਾ ਵਰਣਨ ਕਰੋ।
4. ਜਪਜੀ ਬਾਣੀ ਦੇ ਪੰਜ -ਖੰਡ
5. ਜਪੁਜੀ ਬਾਣੀ ਦਾ ਦਾਰਸ਼ਨਿਕ ਪਰਿਪੇਖ
6. ਜਪੁ ਬਾਣੀ ਅਨੁਸਾਰ ਸਚਿਆਰ ਦਾ ਸੰਕਲਪ
7. ਜਪੁਜੀ ਬਾਣੀ ਦਾ ਸਾਹਿਤਕ ਵਿਸ਼ਲੇਸ਼ਣ
8. ਸੁਖਮਨੀ ਬਾਣੀ ਵਿਚ ਸੁੱਖ ਦਾ ਸੰਕਲਪ
9. ਸੁਖਮਨੀ ਬਾਣੀ ਅਨੁਸਾਰ ਪੂਰਨ ਪੁਰਖ ਦਾ ਸਰੂਪ
10. ਸੁਖਮਨੀ ਬਾਣੀ ਦਾ ਦਾਰਸ਼ਨਿਕ ਅਧਿਐਨ
11. ਸੁਖਮਨੀ ਬਾਣੀ ਦਾ ਸਾਹਿਤਕ ਵਿਸ਼ਲੇਸ਼ਣ
12. ਸ੍ਰੀ ਗੁਰੂ ਤੇਗ ਬਹਾਦਰ ਸਾਹਿਬ ਜੀ ਦੀ ਬਾਣੀ ਦੀ ਪ੍ਰਮੁੱਖ ਸੁਰ ਵੈਰਾਗਮਈ ਹੈ? ਇਸ ਕਥਨ ਨੂੰ ਸਪੱਸ਼ਟ ਕਰੋ।
13. ਸ੍ਰੀ ਗੁਰੂ ਤੇਗ ਬਹਾਦਰ ਜੀ ਦੀ ਬਾਣੀ ਦੀਆਂ ਸ਼ੈਲੀਗਤ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ ਬਾਰੇ ਚਰਚਾ ਕਰੋ।
14. ਸ੍ਰੀ ਗੁਰੂ ਤੇਗ ਬਹਾਦਰ ਜੀ ਦੀ ਬਾਣੀ ਦੇ ਆਧਾਰ ‘ਤੇ ਨਾਮ ਦੇ ਸੰਕਲਪ ਦੀ ਚਰਚਾ ਕਰੋ।
15. ਸ੍ਰੀ ਗੁਰੂ ਤੇਗ ਬਹਾਦਰ ਜੀ ਦੀ ਬਾਣੀ ਅਨੁਸਾਰ ਮਨ ਦੇ ਸੰਕਲਪ ਬਾਰੇ ਵਿਆਖਿਆ ਕਰੋ।
16. ਸ੍ਰੀ ਗੁਰੂ ਰਾਮਦਾਸ ਜੀ ਰਚਿਤ ‘ਗਉੜੀ ਕੀ ਵਾਰ’ ਦਾ ਵਿਸ਼ਾ
17. ਗਉੜੀ ਕੀ ਵਾਰ ਦੀਆਂ ਇਕ ਵਾਰ ਵਜੋਂ ਕਾਵਿਕ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ ਦਾ ਵਿਸ਼ਲੇਸ਼ਣ ਕਰੋ।
18. ਗਉੜੀ ਦੀ ਵਾਰ ਦਾ ਦਾਰਸ਼ਨਿਕ ਪੱਖ ਤੋਂ ਅਧਿਐਨ
19. ਭਗਤ ਬਾਣੀ ਦਾ ਸਮਾਜ-ਸਭਿਆਚਾਰਕ ਅਧਿਐਨ
20. ਡਾ ਫੌਜਾ ਸਿੰਘ ਦੇ ਲੇਖ ਦੇ ਆਧਾਰ ‘ਤੇ ਗੁਰਬਾਣੀ ਬਾਰੇ ਪ੍ਰਾਪਤ ਇਤਿਹਾਸਕ ਅਧਿਐਨਾਂ ਦਾ ਵਿਸ਼ਲੇਸ਼ਣ ਕਰੋ।
21. ਫ਼ਰੀਦ ਬਾਣੀ ਦਾ ਵਿਸ਼ਾ
22. ਫ਼ਰੀਦ ਬਾਣੀ ਦਾ ਸਮਾਜ-ਸਭਿਆਚਾਰਕ ਵਿਸ਼ਲੇਸ਼ਣ

23. ਫਰੀਦ ਬਾਣੀ ਅਨੁਸਾਰ ਨਾਸ਼ਮਾਨਤਾ ਦਾ ਸੰਕਲਪ
24. ਫਰੀਦ ਬਾਣੀ ਦਾ ਸਾਹਿਤਕ ਵਿਸ਼ਲੇਸ਼ਣ
25. ਭਗਤ ਕਬੀਰ ਬਾਣੀ ਦੇ ਪ੍ਰਮੁੱਖ ਵਿਸ਼ੇ
26. ਭਗਤ ਕਬੀਰ ਬਾਣੀ ਦੀ ਸ਼ੈਲੀ
27. ਕਬੀਰ ਬਾਣੀ ਦੀ ਸਮਕਾਲੀ ਸਮਾਜ ਵਿੱਚ ਪ੍ਰਾਸੰਗਿਕਤਾ
28. ਕਬੀਰ ਬਾਣੀ ਦਾ ਸਾਹਿਤਕ ਵਿਸ਼ਲੇਸ਼ਣ
29. ਭਗਤ ਨਾਮਦੇਵ ਬਾਣੀ ਦੇ ਪ੍ਰਮੁੱਖ ਵਿਸ਼ੇ
26. ਭਗਤ ਨਾਮਦੇਵ ਬਾਣੀ ਦੀ ਸ਼ੈਲੀ
27. ਭਗਤ ਨਾਮਦੇਵ ਬਾਣੀ ਦੀ ਸਮਕਾਲੀ ਸਮਾਜ ਵਿੱਚ ਪ੍ਰਾਸੰਗਿਕਤਾ
28. ਭਗਤ ਨਾਮਦੇਵ ਬਾਣੀ ਦਾ ਸਾਹਿਤਕ ਵਿਸ਼ਲੇਸ਼ਣ
29. ਖਟ ਦਰਸ਼ਨ ਤੋਂ ਕੀ ਭਾਵ ਹੈ?
30. ਬਾਣੀ ਅਤੇ ਕਾਵਿ ਵਿਚ ਅੰਤਰ ਦੱਸੋ?

ਐਮ ਏ ਪੰਜਾਬੀ ਭਾਗ-ਪਹਿਲਾ
ਪਰਚਾ ਪਹਿਲਾ-ਵਿਸ਼ਾ: ਪੰਜਾਬੀ ਸਾਹਿਤ ਦਾ ਇਤਿਹਾਸ

1. ਇਤਿਹਾਸਕਾਰੀ ਅਤੇ ਸਾਹਿਤ-ਇਤਿਹਾਸਕਾਰੀ ਵਿਚ ਅੰਤਰ ਦੱਸਦੇ ਹੋਏ ਸਾਹਿਤ-ਇਤਿਹਾਸਕਾਰੀ ਦੇ ਸਿਧਾਂਤਕ ਆਧਾਰਾਂ ਬਾਰੇ ਚਰਚਾ ਕਰੋ।
2. ਪੰਜਾਬੀ ਸਾਹਿਤ-ਇਤਿਹਾਸਕਾਰੀ ਵਿਚ ਕਾਲ-ਵੰਡ ਅਤੇ ਨਾਮਕਰਣ ਦੀਆਂ ਕੀ-ਕੀ ਸਮੱਸਿਆਵਾਂ ਹਨ?
3. ਪੰਜਾਬੀ ਸਾਹਿਤ-ਇਤਿਹਾਸਕਾਰੀ ਵਿਚ ਕਾਲ-ਵੰਡ ਅਤੇ ਨਾਮਕਰਣ ਦੀ ਵੰਡ ਸਬੰਧੀ ਸੁਝਾਅ।
4. ਆਦਿਕਾਲੀਨ ਪੰਜਾਬੀ ਸਾਹਿਤ ਦੇ ਇਤਿਹਾਸਕ, ਰਾਜਨੀਤਕ ਅਤੇ ਸਭਿਆਚਾਰਕ ਪਿਛੋਕੜ ਬਾਰੇ ਚਾਣਨਾ ਪਾਉ।
5. ਆਦਿਕਾਲੀਨ ਪੰਜਾਬੀ ਸੂਫੀ ਕਾਵਿ-ਧਾਰਾ ਬਾਰੇ ਵਰਣਨ ਦੱਸੋ।
6. ਆਦਿਕਾਲੀਨ ਪੰਜਾਬੀ ਭਗਤੀ ਕਾਵਿ-ਧਾਰਾ ਬਾਰੇ ਵਰਣਨ ਦੱਸੋ।
7. ਆਦਿਕਾਲੀਨ ਪੰਜਾਬੀ ਬੀਰ ਕਾਵਿ-ਧਾਰਾ ਬਾਰੇ ਵਰਣਨ ਦੱਸੋ।
8. ਲੋਕ ਸਾਹਿਤ 'ਤੇ ਨੋਟ ਲਿਖੋ।
9. ਗੁਰਮਤਿ ਕਾਵਿ-ਧਾਰਾ 'ਤੇ ਨੋਟ ਲਿਖੋ।
10. ਸੂਫੀ ਕਾਵਿ-ਧਾਰਾ 'ਤੇ ਨੋਟ ਲਿਖੋ।
11. ਕਿੱਸਾ ਕਾਵਿ-ਧਾਰਾ 'ਤੇ ਨੋਟ ਲਿਖੋ।
12. ਵਾਰ ਕਾਵਿ-ਧਾਰਾ 'ਤੇ ਨੋਟ ਲਿਖੋ।
13. ਜੰਗਨਾਮਾ ਸਾਹਿਤ 'ਤੇ ਨੋਟ ਲਿਖੋ।
14. ਵਾਰਤਕ ਦੇ ਰੂਪਾਂ ਬਾਰੇ ਚਰਚਾ ਕਰੋ।
15. ਸ਼੍ਰੀ ਗੁਰੂ ਗ੍ਰੰਥ ਦੀ ਸਾਹਿਤਕ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ ਬਾਰੇ ਵਰਣਨ ਕਰੋ।
16. ਸ਼੍ਰੀ ਗੁਰੂ ਗ੍ਰੰਥ ਦੀ ਸਮਾਜ-ਸਭਿਆਚਾਰਕ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ ਬਾਰੇ ਵਰਣਨ ਕਰੋ।
17. ਆਦਿ-ਕਾਲ ਵਿਚ ਰਚੀਆਂ ਲੋਕ ਵੀਰ-ਰਸੀ ਵਾਰਾਂ ਦੇ ਨਾਂ ਦੱਸੋ।
18. .ਡਾ. ਮੋਹਨ ਸਿੰਘ ਦੀਵਾਨਾ ਦੇ ਸਾਹਿਤ-ਇਤਿਹਾਸਾਂ ਦੇ ਨਾਂ ਲਿਖੋ।
19. .ਨਾਥ-ਯੋਗੀਆਂ ਦੀ ਭਾਸ਼ਾ ਵਿਚੋਂ ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦਾ ਕਿਹੜਾ ਰੂਪ ਉੱਘੜਵੇਂ ਰੂਪ ਵਿਚ ਉਜਾਗਰ ਹੁੰਦਾ ਹੈ?
20. ਆਧੁਨਿਕਤਾ ਤੇ ਆਧੁਨਿਕ ਸੰਵੇਦਨਾ ਬਾਰੇ ਚਰਚਾ ਕਰੋ।
21. ਆਧੁਨਿਕਤਾ ਦੇ ਪ੍ਰਮੁੱਖ ਸੰਕਲਪ।
22. ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਕਵਿਤਾ ਦੀਆਂ ਪ੍ਰਮੁੱਖ ਪ੍ਰਵਿਰਤੀਆਂ
23. ਪ੍ਰਗਤੀਵਾਦੀ ਪੰਜਾਬੀ ਸਾਹਿਤ
24. ਰੁਮਾਂਸਵਾਦੀ ਪੰਜਾਬੀ ਸਾਹਿਤ
25. ਜੁਝਾਰਵਾਦ ਪ੍ਰਵਿਰਤੀ ਦੇ ਸੰਕਲਪ ਤੇ ਸਿਧਾਂਤ
26. ਪੰਜਾਬੀ ਨਾਵਲ ਦਾ ਨਿਕਾਸ 'ਤੇ ਵਿਕਾਸ
27. ਪੰਜਾਬੀ ਕਹਾਣੀ ਦਾ ਨਿਕਾਸ 'ਤੇ ਵਿਕਾਸ
28. ਪੰਜਾਬੀ ਨਾਟਕ ਦਾ ਇਤਿਹਾਸ
29. ਪੰਜਾਬੀ ਰੰਗਮੰਚੀ ਸਾਹਿਤ ਤੇ ਇਕਾਂਗੀ

L-18/2113

ANALYTICAL CHEMISTRY-2301-T

(Semester-III)

Time : Three Hours]

[Maximum Marks : 55

Note : Attempt *two* questions each from Section-A and B.
Section-C is compulsory.

SECTION-A

- I. (a) Describe the criteria of good sampling plan. Discuss sampling plan for liquids.
- (b) Classify various errors involved in chemical analysis. How such errors can be minimized ? Explain. (4,4)
- II. (a) Describe principle of polarography.
- (b) Describe theory and applications of chronopotentiometry. (2,6)
- III. (a) Derive Ilkovic equation. Discuss its applications and limitations.
- (b) Comment on "Fundamental equation of polarographic wave". (6,2)

IV. Write notes on the following :

(a) Amperometric titrations.

(b) Tensometry.

(c) Correlation and Regression. (3,2,3)

SECTION-B

V. Discuss theory and applications of Thermogravimetry. Also discuss the factors that affect thermogravimetric results.

8½

VI. (a) Discuss principle involved in spectrophotometry. How the photometric accuracy can be estimated ?

(b) Describe applications of spectrophotometric titration for the quantitative estimation. (3½,5)

VII. Give synthesis of various types of Ion-exchangers. How will you determine Cu(II) from a brine solution ? 8½

VIII. Write notes on the following :

(a) Stratified and Random sampling.

(b) Analysis of Variance.

(c) Beer's law. (3½,3,2)

SECTION-C
(Compulsory Question)

IX. Attempt all the following :

- (a) What is half wave potential ? Discuss the factors affecting half wave potential.
- (b) Define Distribution ratio.
- (c) Differentiate between accuracy and precision with a suitable example.
- (d) What is meant by Linear regression ? Explain.
- (e) Discuss the merits of Dropping mercury electrode.
- (f) Define Diffusion current.
- (g) What are the functions of supporting electrolyte ?
- (h) Give characteristics of limiting current.
- (i) Discuss the need of Analytical Chemistry.
- (j) What is meant by the term "Repeatability" ? Why is it important for estimating the accuracy of the measured data ?
- (k) What do you mean by Thermometric titrations ?

(2×11=22)

L-18/2113

ANALYTICAL CHEMISTRY-2301-T

(Semester-III)

Time : Three Hours]

[Maximum Marks : 55

Note : Attempt *two* questions each from Section-A and B.
Section-C is compulsory.

SECTION-A

- I. (a) Describe the criteria of good sampling plan. Discuss sampling plan for liquids.
- (b) Classify various errors involved in chemical analysis. How such errors can be minimized ? Explain. (4,4)
- II. (a) Describe principle of polarography.
- (b) Describe theory and applications of chronopotentiometry. (2,6)
- III. (a) Derive Ilkovic equation. Discuss its applications and limitations.
- (b) Comment on "Fundamental equation of polarographic wave". (6,2)

IV. Write notes on the following :

(a) Amperometric titrations.

(b) Tensometry.

(c) Correlation and Regression. (3,2,3)

SECTION-B

V. Discuss theory and applications of Thermogravimetry. Also discuss the factors that affect thermogravimetric results.

8½

VI. (a) Discuss principle involved in spectrophotometry. How the photometric accuracy can be estimated ?

(b) Describe applications of spectrophotometric titration for the quantitative estimation. (3½,5)

VII. Give synthesis of various types of Ion-exchangers. How will you determine Cu(II) from a brine solution ? 8½

VIII. Write notes on the following :

(a) Stratified and Random sampling.

(b) Analysis of Variance.

(c) Beer's law. (3½,3,2)

SECTION-C
(Compulsory Question)

IX. Attempt all the following :

- (a) What is half wave potential ? Discuss the factors affecting half wave potential.
- (b) Define Distribution ratio.
- (c) Differentiate between accuracy and precision with a suitable example.
- (d) What is meant by Linear regression ? Explain.
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- (h) Give characteristics of limiting current.
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- (j) What is meant by the term "Repeatability" ? Why is it important for estimating the accuracy of the measured data ?
- (k) What do you mean by Thermometric titrations ?

(2×11=22)

Roll No.

Total Pages : 4

27053/NH

AS/2113

ORGANIC CHEMISTRY

Paper-CHEB 1102T

Semester-I (Syllabus-Dec.22)

Time Allowed : 3 Hours]

[Maximum Marks : 26

Note : The candidates are required to attempt **two** questions each from Sections A and B carrying 4 marks each and the entire Section C consisting of 5 short answer type questions carrying 2 marks each.

SECTION—A

1. (a) Differentiate between Inductive effect and Electromeric effect. 2

27053/NH/976/W/2010

[P. T. O.]

- (b) Write a note on hyperconjugation. 2
2. (a) What are carbocations? Discuss formation, structure and stability of carbocations. 3
- (b) Define and explain aromaticity with example. 1
3. (a) What is isotopic effect? How is it used in ascertaining the mechanism of a reaction. 2
- (b) What are Field effects? Give example. 1
- (c) Define hydrogen bonding. Give conditions for H-bonding. 1
4. (a) Explain the following in detail : $2 \times 1\frac{1}{2} = 3$
- (i) Wurtz reaction (ii) Kolbe reaction
- (b) Write a note on selectivity and reactivity of alkanes in halogenation reactions. 1

SECTION—B.

5. (a) Explain Baeyer's strain theory and its limitations. 3

- (b) What are 'Banana bonds'? In which of the compounds these are present? 1
6. (a) Discuss the mechanism of hydrations of alcohols to form alkenes. 2
- (b) State and explain Markownikov's rule with example. Explain the mechanism of addition of HBr on propane in the presence of a peroxide. 2
7. (a) Write a note on ozonolysis and hydroxylation of olefins. 3
- (b) What is hydroboration oxidation? Explain with mechanism. 1
8. (a) Discuss Diel Alder's reaction with examples and mechanism. 3
- (b) Why terminal alkynes are acidic in character? 1

SECTION—C

9. Write short notes on the following : $5 \times 2 = 10$

(i) Write names and structural formulae of chain isomers of alkane having molecular formula, C_5H_{12} .

(ii) Differentiate between homolytic and heterolytic bond breaking, giving example.

(iii) Explain free radical polymerisation of alkenes with suitable example.

(iv) Discuss structure and bonding in alkynes.

(v) Complete the following reactions :



Roll No.

Total Pages : 3

22475/NH

CS/2113

CONDENSED MATTER PHYSICS-I

Paper-PHYB-3501T

Semester-V

Time Allowed : 3 Hours] [Maximum Marks : 30

Note : The candidates are required to attempt **two** questions each from Sections A and B carrying 5 marks each and the entire Section C consisting of 5 short answer type questions carrying 2 marks each. Use of Non-programmable calculator is allowed.

SECTION—A

1. (a) What are Symmetry operations ? Describe the principle Symmetry operations applicable to a three-dimensional lattice. 4

22475/NH/518/W/3,710

[P. T. O.]

- (b) What is Space lattice ? 1
2. Determine the Interplaner spacing between two parallel planes with Miller Indices $\{hkl\}$ in a Cubic crystal of side "a". 5
3. (a) Prove that Crystals can't have 5-fold symmetry. 3
- (b) What do you mean by Space group ? Give its characteristics. 2
4. Describe Hexagonal Close Packed (HCP) structure and find its co-ordination number and atomic packing fraction. 5

SECTION—B

5. Derive Laue's equations for X-ray diffraction by Crystals. How do those lead to Bragg's equation ? 5
6. How is reciprocal lattice constructed ? How does it help in determination of Crystal structure ? 5

7. (a) Discuss the methods for Crystal structure determination for x-ray diffraction. 4
- (b) What is Brillouin Zone ? 1
8. Explain Geometrical structure factor. Calculate it for Simple Cubic (SC), Body Centred Cubic (bcc) and Face Centered Cubic (fcc) lattice. 5

SECTION—C

9. Write short answer of the following : $5 \times 2 = 10$
- (i) What is Wigner Seitz cell ?
 - (ii) What are considerations in deriving Laue's equations ?
 - (iii) Show that reciprocal lattice of fcc is bcc.
 - (iv) What is atomic scattering factor ?
 - (v) Why Optical grating is not suitable to study the diffraction of x-rays ?
 - (vi) What is Ewald Construction ?
 - (vii) What is Reciprocal Lattice Vector ?

PC-22001/N

L-16/2113

CONDENSED MATTER PHYSICS-I – 2101T

(Semester-III)

Time : Three Hours]

[Maximum Marks : 60

Note : The question paper consist of three Sections A, B and C. Section A and B has four questions each, carries 10 marks each. Candidates are required to attempt *two* questions each from Section A and B. Section C has 10 compulsory short answer type questions of 2 marks each.

SECTION – A

(Attempt any *two* questions)

- I. What are Brillouin zones? How are Brillouin zones constructed? Give the sketches of the first Brillouin zones of bcc and fcc lattice.
- II. Explain three dimensional free electron gas theory. Obtain the expressions for Fermi energy and density of states for free electron gas in three dimension.
- III. Describe the bottom up method the synthesis of nanoparticles. How is it different from top-down method of synthesis?

- IV. Give a brief introduction of nanoparticles. Describe the various properties of semiconducting nanoparticles. (2×10=20)

SECTION – B

(Attempt any *two* questions)

- V. Derive the expression for the two Kramers-Kronig relations. Give significance of Kramers-Kronig relations.
- VI. How do you account for the effective mass of an electron in a crystal? Discuss the concept of positive, negative and infinite effective mass.
- VII. Obtain an expression for intrinsic concentration of electrons in conduction band and holes in valence bands.
- VIII. Explain the various zone schemes which are required to construct the Fermi surfaces. (2×10=20)

SECTION– C

(Attempt all Questions)

- IX. Attempt all the following questions :
- (a) Distinguish between quantum well, quantum wire, and quantum dot.
- (b) What is the relationship between the real and reciprocal space lattices?
- (c) Explain Bragg's Law.

- (d) How the conductivity of metal and semiconductor change with temperature and why?
 - (e) How would you define structure factor? What information can be derived from it?
 - (f) Explain the occurrence of stokes and anti stokes line in Raman effect.
 - (g) Semiconductor nanocrystals are called as artificial atoms. Explain.
 - (h) Enlist various applications of Hall effect.
 - (i) Mention distinctive properties of C_{60} .
 - (j) Define absolute thermoelectric power. How it is related to Peltier coefficient? (10×2=20)
-

PC-22461/NH

CS/2113

INORGANIC CHEMISTRY-I-CHEB-3101T

(Semester-V)

Time : Three Hours]

[Maximum Marks : 26

Note : Attempt *five* questions in all, selecting *two* questions from each Section A and B carrying 4 marks and entire Section C consisting of 5 short answer type questions carrying 2 marks each.

SECTION – A

- I. Explain crystal field splitting for tetrahedral complexes. 4
- II. Write SN^2 mechanism for the substitution reaction of square planar complexes. 4
- III. Write the factors affecting the stability of complexes. 4
- IV. Discuss valence bond theory and its limitation. 4

SECTION – B

- V. How orbitals contribute towards the magnetic moment? Write the conditions when orbital magnetic moment is quenched. 4
- VI. Discuss the electronic spectrum of $[\text{Ti}(\text{H}_2\text{O})_6]^{3+}$. 4
- VII. Describe two methods for determining the magnetic susceptibility. 4
- VIII. Write the types of electronic transitions and selection rules for electronic transitions. 4

SECTION – C

(Compulsory Question)

- IX. Answer the following in brief :
- (a) What is magnetic susceptibility?
 - (b) Write spin only formula to calculate magnetic moment.
 - (c) What is effect of oxidation state on crystal field splitting?
 - (d) Write the spectroscopic ground state for d^2 configuration.
 - (e) What are labile and inert complexes? (5×2=10)
-

PC-22461/NH

CS/2113

INORGANIC CHEMISTRY-I-CHEB-3101T

(Semester-V)

Time : Three Hours]

[Maximum Marks : 26

Note : Attempt *five* questions in all, selecting *two* questions from each Section A and B carrying 4 marks and entire Section C consisting of 5 short answer type questions carrying 2 marks each.

SECTION – A

- I. Explain crystal field splitting for tetrahedral complexes. 4
- II. Write SN^2 mechanism for the substitution reaction of square planar complexes. 4
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- V. How orbitals contribute towards the magnetic moment? Write the conditions when orbital magnetic moment is quenched. 4
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(Compulsory Question)

- IX. Answer the following in brief :
- (a) What is magnetic susceptibility?
 - (b) Write spin only formula to calculate magnetic moment.
 - (c) What is effect of oxidation state on crystal field splitting?
 - (d) Write the spectroscopic ground state for d^2 configuration.
 - (e) What are labile and inert complexes? (5×2=10)
-

PC-22461/NH

CS/2113

INORGANIC CHEMISTRY-I-CHEB-3101T

(Semester-V)

Time : Three Hours]

[Maximum Marks : 26

Note : Attempt *five* questions in all, selecting *two* questions from each Section A and B carrying 4 marks and entire Section C consisting of 5 short answer type questions carrying 2 marks each.

SECTION – A

- I. Explain crystal field splitting for tetrahedral complexes. 4
- II. Write SN^2 mechanism for the substitution reaction of square planar complexes. 4
- III. Write the factors affecting the stability of complexes. 4
- IV. Discuss valence bond theory and its limitation. 4

SECTION – B

- V. How orbitals contribute towards the magnetic moment? Write the conditions when orbital magnetic moment is quenched. 4
- VI. Discuss the electronic spectrum of $[\text{Ti}(\text{H}_2\text{O})_6]^{3+}$. 4
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SECTION – C

(Compulsory Question)

- IX. Answer the following in brief :
- (a) What is magnetic susceptibility?
 - (b) Write spin only formula to calculate magnetic moment.
 - (c) What is effect of oxidation state on crystal field splitting?
 - (d) Write the spectroscopic ground state for d^2 configuration.
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PC-22461/NH

CS/2113

INORGANIC CHEMISTRY-I-CHEB-3101T

(Semester-V)

Time : Three Hours]

[Maximum Marks : 26

Note : Attempt *five* questions in all, selecting *two* questions from each Section A and B carrying 4 marks and entire Section C consisting of 5 short answer type questions carrying 2 marks each.

SECTION - A

- I. Explain crystal field splitting for tetrahedral complexes. 4
- II. Write SN^2 mechanism for the substitution reaction of square planar complexes. 4
- III. Write the factors affecting the stability of complexes. 4
- IV. Discuss valence bond theory and its limitation. 4

SECTION – B

- V. How orbitals contribute towards the magnetic moment? Write the conditions when orbital magnetic moment is quenched. 4
- VI. Discuss the electronic spectrum of $[\text{Ti}(\text{H}_2\text{O})_6]^{3+}$. 4
- VII. Describe two methods for determining the magnetic susceptibility. 4
- VIII. Write the types of electronic transitions and selection rules for electronic transitions. 4

SECTION – C

(Compulsory Question)

- IX. Answer the following in brief :
- (a) What is magnetic susceptibility?
 - (b) Write spin only formula to calculate magnetic moment.
 - (c) What is effect of oxidation state on crystal field splitting?
 - (d) Write the spectroscopic ground state for d^2 configuration.
 - (e) What are labile and inert complexes? (5×2=10)
-

Roll No.

Total Pages : 7

21812/N

K-15/2113

ORGANIC CHEMISTRY

Paper-1102T

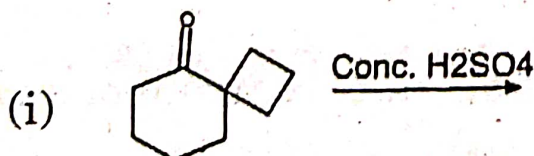
Semester-I

Time Allowed : 3 Hours] [Maximum Marks : 70

Note : The candidates are required to attempt **two** questions each from Sections A and B carrying 12 marks each and the entire Section C consisting of 11 short answer type questions carrying 2 marks each.

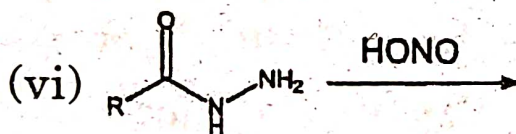
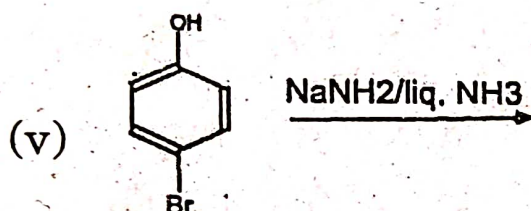
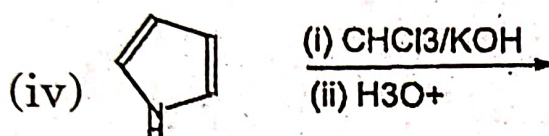
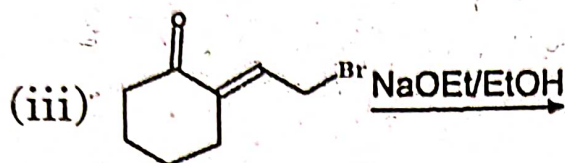
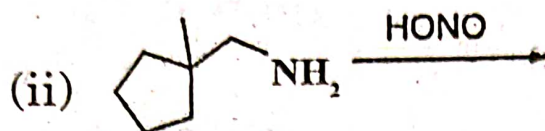
SECTION—A

1. Give the major product and mechanism of the following reactions : 6×2=12

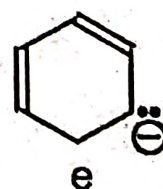
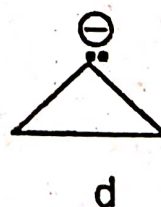
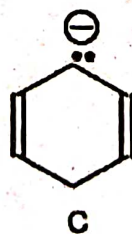
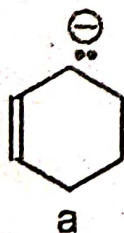


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[P. T. O.]



2. (a) Arrange the following in decreasing order of their stability and justify your order. 3

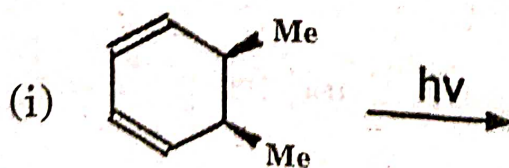


- (b) Discuss Auto-oxidation and rearrangement reactions of Free radical. 4

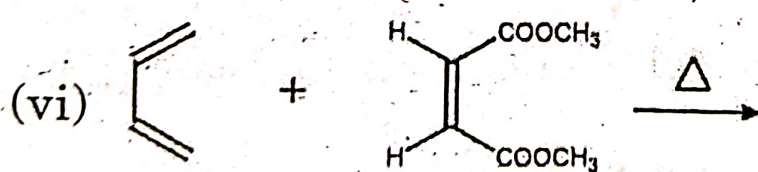
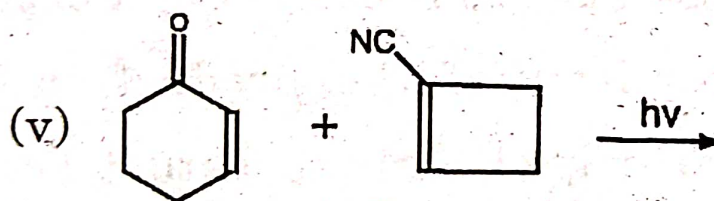
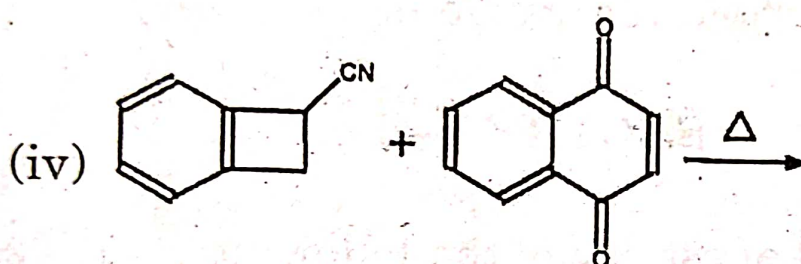
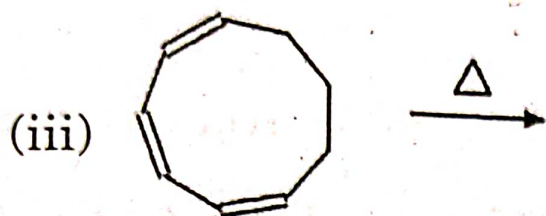
- (c) Discuss the bromination of cyclohexene by NBS with and without involving radical initiator. 5
3. (a) Explain Homo-aromaticity, anti-aromaticity and non-aromaticity taking suitable examples. 6
- (b) Discuss the bonding in Cyclodextrin and Crown ether complexes along with their applications. 6
4. (a) Discuss taking suitable reaction, how correct identification of reaction product(s) and trapping of intermediate is essential for determination of mechanism ? 5
- (b) How use of Isotopes in Claisen rearrangement help in determination of reaction mechanism ? 5
- (c) What information is obtained from Crossover experiments ? Explain. 2

SECTION—B

5. (a) What are the conditions that favour E_{1cb} mechanism in an elimination reaction ? Illustrate with examples. 4
- (b) In E_2 reaction a threo form gives trans alkene while an erythro form gives a cis olefin. Explain. 4
- (c) Explain why E_2 reaction is most common elimination reaction among E_2 , E_1 and E_{1cb} ? 4
6. Explain the following in detail :
- (a) Elimination versus substitution. 4
- (b) Mechanism of Pyrolysis of esters. 4
- (c) Addition elimination mechanism. 4
7. Give product with its stereochemistry in the reactions given below : 6×2=12



21812/N/593/W/510



8. (a) With the help of FMO method, explain the stereochemistry of [3,3] sigmatropic rearrangements under thermal and photochemical conditions. 4

(b) Using PMO method prove that Cope rearrangement occurs preferentially through the chair-like rather than a boat like transition state. 4

(c) Explain sigmatropic shifts involving carbon moieties with stereochemical aspects in Sigmatropic rearrangement. 4

SECTION—C

9. Attempt all questions of the following : $11 \times 2 = 22$

(i) Discuss the insertion reaction and explain Stereochemistry of the product in the reaction of triplet carbene with trans 2-butene.

(ii) Explain Polar effects in Halogenation.

(iii) Discuss structure and stability of Nitrene.

(iv) Discuss annelation effect.

(v) Explain how NMR is helpful in the detection of Carbocation.

- (vi) How benzene and Carbene are trapped ?
- (vii) Discuss γ -elimination reaction.
- (viii) Discuss the effect of Protic and Aprotic solvent in elimination reaction.
- (ix) Discuss the Hofmann rule with example.
- (x) Draw the Frontier orbitals of 1,3,5-hexatriene.
- (xi) Discuss the Claisen rearrangement.

PC-22441/NH

B/2113

INORGANIC CHEMISTRY-CHEB-2101T
(Semester-III)

Time : Three Hours]

[Maximum Marks : 26

Note : The question paper will consist of three sections : A, B and C. Section A, B will have four questions each from respective section of the syllabus and will carry 4 marks each. Attempt two questions each from Section A and B. Section C will consist of 5 short answer questions that will cover the entire syllabus and will be 2 marks each. Use of scientific non-programmable calculator is allowed.

SECTION - A

- I. Discuss the oxidation order in the first transition series.
- II. Explain the Lanthanide contraction.
- III. Explain the square planar geometry by example.
- IV. Why transition metal and their compounds are show catalytic activity? (2×4=8)

22441-NH/4110/HHH/451

[P.T.O.]

SECTION – B

- V. What do you mean by actinide contraction?
- VI. Explain three similarities between actinides and later lanthanides.
- VII. Discuss the Magnetic behaviour of second transition series.
- VIII. Explain the separation techniques for Np. (2×4=8)

SECTION – C

(Compulsory Question)

- IX. Write short notes on the following :
- (a) What do you mean by coordination number?
 - (b) Define ionic radii and oxidation state.
 - (c) What is electronic configuration of Cu(II), Ni(II) and Zn(II)?
 - (d) What do you mean by paramagnetic and diamagnetic behaviour?
 - (e) What is most common oxidation state in actinoids?
- (5×2=10)
-

PC-22441/NH

B/2113

INORGANIC CHEMISTRY-CHEB-2101T

(Semester-III)

Time : Three Hours]

[Maximum Marks : 26

Note : The question paper will consist of three sections : A, B and C. Section A, B will have four questions each from respective section of the syllabus and will carry 4 marks each. Attempt two questions each from Section A and B. Section C will consist of 5 short answer questions that will cover the entire syllabus and will be 2 marks each. Use of scientific non-programmable calculator is allowed.

SECTION - A

- I. Discuss the oxidation order in the first transition series.
- II. Explain the Lanthanide contraction.
- III. Explain the square planar geometry by example.
- IV. Why transition metal and their compounds are show catalytic activity?
(2×4=8)

22441-NH/4110/HHH/451

[P.T.O.]

SECTION – B

- V. What do you mean by actinide contraction?
- VI. Explain three similarities between actinides and later lanthanides.
- VII. Discuss the Magnetic behaviour of second transition series.
- VIII. Explain the separation techniques for Np. (2×4=8)

SECTION – C

(Compulsory Question)

- IX. Write short notes on the following :
- (a) What do you mean by coordination number?
 - (b) Define ionic radii and oxidation state.
 - (c) What is electronic configuration of Cu(II), Ni(II) and Zn(II)?
 - (d) What do you mean by paramagnetic and diamagnetic behaviour?
 - (e) What is most common oxidation state in actinoids?
- (5×2=10)
-

Total Pages : 2

PC-22425/NH

AS/2113

CELL BIOLOGY-ZOO-B 1101T

(Semester-I)

Time : Three Hours]

[Maximum Marks : 35

Note : Attempt *two* questions from each Section A and B carrying 6 marks each and the entire Section C consisting of 11 short answer type questions carrying 1 mark each.

SECTION-A

- I. Describe the structure of eukaryotic cell with a well labelled diagram. 6
- II. Give an account of various models of structure of plasma membrane. 6
- III. Describe the structure, functions and types of Endoplasmic Reticulum. 6
- IV. Write about Cell-cell junctions. 6

SECTION-B

- V. (a) Differentiate between Euchromatin and Heterochromatin.
- (b) Write about Mitochondrial respiratory chain. 6

- VI. (a) Describe structure and functions of intermediate filaments. 3
(b) Briefly explain Nuclear envelope. 3
- VII. Differentiate between Mitosis and Meiosis. 6
- VIII. Explain the structure and functions of Mitochondria. 6

SECTION-C

IX. Write short answers of the following :

- (i) Nuclear pore.
- (ii) SEM vs. TEM.
- (iii) Active transport.
- (iv) Cell cycle.
- (v) Lysosomes.
- (vi) Light microscope.
- (vii) Microtubules.
- (viii) Difference between prokaryotic and eukaryotic cell.
- (ix) Protein sorting.
- (x) Chemi-osmotic hypothesis.
- (xi) Ribosomes. (1×11 = 11)

AS/2113

CELL BIOLOGY-ZOO-B 1101T

(Semester-I)

Time : Three Hours]

[Maximum Marks : 35

Note : Attempt *two* questions from each Section A and B carrying 6 marks each and the entire Section C consisting of 11 short answer type questions carrying 1 mark each.

SECTION-A

- I. Describe the structure of eukaryotic cell with a well labelled diagram. 6
- II. Give an account of various models of structure of plasma membrane. 6
- III. Describe the structure, functions and types of Endoplasmic Reticulum. 6
- IV. Write about Cell-cell junctions. 6

SECTION-B

- V. (a) Differentiate between Euchromatin and Heterochromatin.
- (b) Write about Mitochondrial respiratory chain. 6

- VI. (a) Describe structure and functions of intermediate filaments. 3
(b) Briefly explain Nuclear envelope. 3
- VII. Differentiate between Mitosis and Meiosis. 6
- VIII. Explain the structure and functions of Mitochondria. 6

SECTION-C

IX. Write short answers of the following :

- (i) Nuclear pore.
- (ii) SEM vs. TEM.
- (iii) Active transport.
- (iv) Cell cycle.
- (v) Lysosomes.
- (vi) Light microscope.
- (vii) Microtubules.
- (viii) Difference between prokaryotic and eukaryotic cell.
- (ix) Protein sorting.
- (x) Chemo-osmotic hypothesis.
- (xi) Ribosomes. (1×11 = 11)

Roll No.

Total Pages : 4

22422/NH

AS/2113

ORGANIC CHEMISTRY

Paper—CHEB1102T

Semester—I

Time Allowed : 3 Hours]

[Maximum Marks : 35

Note : The candidates are required to attempt **two** questions each from Sections A and B carrying 6 marks each and the entire Section C consisting of 11 short answer type questions carrying 1 mark each.

SECTION—A

1. Explain the structure, stability, and methods of formation of the following reaction intermediates :

(a) Carbocation. 3

(b) Carbene. 3

22422/NH/506/W/4,310

[P. T. O.]

2. How will you determine the reaction mechanism.
Give two methods. 6
3. Explain the following with suitable examples :
- (a) Hydrogen bonding. 2
 - (b) Aromaticity. 2
 - (c) Hyperconjugation. 2
4. (a) Discuss Wurtz and Kolbe's reaction with the
mechanism. 3
- (b) Give the mechanism of free radical
halogenation of alkanes. 3

SECTION—B

5. (a) Write a short note on Baeyer's strain theory
and its limitations. 3
- (b) What is the concept of bonding for cyclopropane.
Discuss in detail. 3
6. (a) Describe the Markownikoff's rule for the
addition reactions of alkenes. 3

- (b) Outline the mechanism of ozonolysis with 2 suitable examples. 3
7. (a) Differentiate between Saytzeff rule and Hofmann elimination by giving suitable examples in each case. 3
- (b) Discuss the Diels-Alder reaction with suitable examples. 3
8. (a) Explain the direct and conjugate addition reactions of Dienes. 3
- (b) Describe the hydroboration-oxidation reaction of alkynes with suitable examples. 3

SECTION—C

9. Write short notes on the following : 11×1=11
- (i) Inductive effect.
 - (ii) Epoxidation of alkenes.
 - (iii) Structure of benzyne.
 - (iv) Corey-House reaction.

- (v) A method for the synthesis of alkenes.
- (vi) Addition reactions of cycloalkanes with two examples.
- (vii) Field effect.
- (viii) Electrophiles and Nucleophiles.
- (ix) Conjugated and comulated dienes.
- (x) Localized and delocalized chemical bond.
- (xi) Order of stability of free radicals.

L-18/2113

ANALYTICAL CHEMISTRY-2301-T

(Semester-III)

Time : Three Hours]

[Maximum Marks : 55

Note : Attempt *two* questions each from Section-A and B.
Section-C is compulsory.

SECTION-A

- I. (a) Describe the criteria of good sampling plan. Discuss sampling plan for liquids.
- (b) Classify various errors involved in chemical analysis. How such errors can be minimized ? Explain. (4,4)
- II. (a) Describe principle of polarography.
- (b) Describe theory and applications of chronopotentiometry. (2,6)
- III. (a) Derive Ilkovic equation. Discuss its applications and limitations.
- (b) Comment on "Fundamental equation of polarographic wave". (6,2)

IV. Write notes on the following :

(a) Amperometric titrations.

(b) Tensometry.

(c) Correlation and Regression. (3,2,3)

SECTION-B

V. Discuss theory and applications of Thermogravimetry. Also discuss the factors that affect thermogravimetric results.

8½

VI. (a) Discuss principle involved in spectrophotometry. How the photometric accuracy can be estimated ?

(b) Describe applications of spectrophotometric titration for the quantitative estimation. (3½,5)

VII. Give synthesis of various types of Ion-exchangers. How will you determine Cu(II) from a brine solution ? 8½

VIII. Write notes on the following :

(a) Stratified and Random sampling.

(b) Analysis of Variance.

(c) Beer's law. (3½,3,2)

SECTION-C
(Compulsory Question)

IX. Attempt all the following :

- (a) What is half wave potential ? Discuss the factors affecting half wave potential.
- (b) Define Distribution ratio.
- (c) Differentiate between accuracy and precision with a suitable example.
- (d) What is meant by Linear regression ? Explain.
- (e) Discuss the merits of Dropping mercury electrode.
- (f) Define Diffusion current.
- (g) What are the functions of supporting electrolyte ?
- (h) Give characteristics of limiting current.
- (i) Discuss the need of Analytical Chemistry.
- (j) What is meant by the term "Repeatability" ? Why is it important for estimating the accuracy of the measured data ?
- (k) What do you mean by Thermometric titrations ?

(2×11=22)

Roll No.

Total Pages : 4

27052/NH

AS/2113

INORGANIC CHEMISTRY

Paper-CHEB 1101T

Semester-I

(Syllabus-Dec.22)

Time Allowed : 3 Hours]

[Maximum Marks : 26

Note : The candidates are required to attempt two questions each from Sections A and B carrying 4 marks each and the entire Section C consisting of 5 short answer type questions carrying 2 marks each.

27052/NH/975/W/2010

[P. T. O.

SECTION—A

1. State and explain :

(a) Pauli's exclusion principle. 2

(b) Aufbau principle. 2

2. (a) Write Schrodinger wave equation and mention the various terms involved in it. 2

(b) Calculate the effective nuclear charge on a 2p-electron in Nitrogen atom. 2

3. Define Ionisation energy and give its units. Discuss the various factors affecting ionisation energy of an element and explain, how ionisation energy varies in a period and group giving reasons? 4

4. Explain the following :

(a) Size of a cation is smaller than the size of corresponding atom. 1

(b) Electron affinity of fluorine is lesser than that of Chlorine. 1

(c) Reason for the late discovery of noble gases.

1

(d) Noble gases are called zero group elements.

1

SECTION—B

5. Discuss valence bond theory and mention its limitations. 4

6. (a) Define hybridisation and give its characteristics. 2

(b) Discuss the shapes of following on the basis of hybridisation :

(i) BF_3

(ii) XeF_4

1+1

7. Draw molecular orbital energy level diagram of oxygen molecule. What inference do you draw from it. 4

8. (a) Explain the shapes of the following on the basis of VSEPR theory :

(i) NH_3

(ii) H_2O

(iii) C_1F_3 .

$\frac{1}{2}, \frac{1}{2}, \frac{1}{2}$

- (b) Explain multicenter bonding in diborane in detail. 2½

SECTION—C

9. Write short notes on the following : 2×5=10

- (i) Give significance of ψ and ψ^2 .
- (ii) Give significance of magnetic quantum number.
- (iii) How electronegativity varies in a period and group? Explain why?
- (iv) Arrange H_2 , H_2^+ and H_2^- in the increasing order of their stability giving reason.
- (v) Both H_2O and CO_2 are triatomic molecules. But net dipole moment of CO_2 molecule is zero but H_2O molecule has net dipole moment of 1.84 D.

CS/2113

MOLECULAR BIOLOGY-ZOO 302

(Semester-V)

Time : Three Hours]

[Maximum Marks : 40

Note : Attempt *two* questions from each Section A and B carrying 6 marks each and the entire Section C consisting of 8 short answer type questions carrying 2 marks each.

SECTION-A

- I. Describe mechanism of RNA processing. 6
- II. Give an account of structure of DNA and its types. 6
- III. Describe mechanism of DNA Replication in Eukaryotes. 6
- IV. Write about mechanism of Transcription in Prokaryotes. 6

SECTION-B

- V. Differentiate between eukaryotic and prokaryotic translation. 6
- VI. Describe regulation of transcription in prokaryotes. 6
- VII. Give an account of R-DNA technology. 6

- VIII. Explain the various applications of R-DNA technology in detection of genetic diseases and gene therapy. 6

SECTION-C

- IX. Write short answers of the following :

- (i) DNA Polymerase.
 - (ii) DNA helix polymorphism.
 - (iii) DNA repair.
 - (iv) Splicing pathways.
 - (v) Differentiate between exons and introns.
 - (vi) Eukaryotic RNA polymerases.
 - (vii) TRP operon.
 - (viii) Restriction endonucleases. (2×8 = 16)
-

CS/2113

MOLECULAR BIOLOGY-ZOO 302

(Semester-V)

Time : Three Hours]

[Maximum Marks : 40

Note : Attempt *two* questions from each Section A and B carrying 6 marks each and the entire Section C consisting of 8 short answer type questions carrying 2 marks each.

SECTION-A

- I. Describe mechanism of RNA processing. 6
- II. Give an account of structure of DNA and its types. 6
- III. Describe mechanism of DNA Replication in Eukaryotes. 6
- IV. Write about mechanism of Transcription in Prokaryotes. 6

SECTION-B

- V. Differentiate between eukaryotic and prokaryotic translation. 6
- VI. Describe regulation of transcription in prokaryotes. 6
- VII. Give an account of R-DNA technology. 6

VIII. Explain the various applications of R-DNA technology in detection of genetic diseases and gene therapy. 6

SECTION-C

IX. Write short answers of the following :

- (i) DNA Polymerase.
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 - (v) Differentiate between exons and introns.
 - (vi) Eukaryotic RNA polymerases.
 - (vii) TRP operon.
 - (viii) Restriction endonucleases. (2×8 = 16)
-

FUNDAMENTALS OF SPECTROSCOPY-2312-T

(Semester-III)

Time : Three Hours]

[Maximum Marks : 55

Note : Attempt *two* questions each from Section-A and B.
Section-C is compulsory.

SECTION-A

- I. (a) Derive an expression that describes the rate of transition.
- (b) Derive time dependent Schrödinger wave equation. Also discuss its significance.
- (c) How does electromagnetic radiation interact with matter ? Discuss natural line width. (2½,2½,3)
- II. (a) Describe vibrational rotational spectra of diatomic molecule (rigid rotor) giving energy level expression, diagram and appropriate selection rules.
- (b) Discuss vibrational spectra of CO₂ and H₂O molecules. (5,3)
- III. (a) Discuss Rotational Raman spectra of diatomic molecule.
- (b) Discuss quantum theory of Raman Effect. (4,4)

IV. Write notes on the following :

- (a) Franck-Condon principle.
- (b) Chemical analysis by Electronic spectroscopy. (4,4)

SECTION-B

V. (a) Discuss the theory and instrumentation in NMR spectroscopy.

- (b) What is Chemical shift ? Explain the phenomenon of chemical shift in NMR spectrum of ethyl alcohol.
(5,3½)

VI. (a) Describe NMR spectra of three interacting, namely, ABX nuclei system.

- (b) Write a note on Exchange phenomenon in NMR spectroscopy. (4½,4)

VII. (a) Explain Zero-field splitting of ESR signal.

- (b) Discuss hyperfine interaction in ESR spectroscopy.
- (c) Predict the ESR spectrum resulting from the coupling of an unpaired electron with two equivalent protons.
(2,2,4½)

VIII. (a) Sketch the high resolution spectrum of methyl radical.

- (b) Write an explanatory note on Double resonance techniques in ESR.
- (c) What is meant by Kramer's degeneracy ? Give its significance. (2,4½,2)

SECTION-C

IX. Explain the following in brief :

- (a) Why ^{12}C don't show NMR spectrum ?
 - (b) Why TMS is used as one of the internal reference in the NMR spectrum ?
 - (c) Discuss the significance of 'g' factor in ESR spectroscopy.
 - (d) Write Karplus equation and explain the terms involved.
 - (e) Define Anharmonicity constant. Also discuss its significance.
 - (f) Explain Bathochromic shift.
 - (g) Define Raman shift.
 - (h) What is meant by Transition probability ? Explain.
 - (i) Define Coupling constant.
 - (j) Why are anti-Stokes lines less intense than the Stokes lines in Raman spectra ?
 - (k) Describe electronic states and term symbols for the ground state. (11×2=22)
-

L-18/2113

FUNDAMENTALS OF SPECTROSCOPY-2312-T

(Semester-III)

Time : Three Hours]

[Maximum Marks : 55

Note : Attempt *two* questions each from Section-A and B.
Section-C is compulsory.

SECTION-A

- I. (a) Derive an expression that describes the rate of transition.
(b) Derive time dependent Schrödinger wave equation. Also discuss its significance.
(c) How does electromagnetic radiation interact with matter ? Discuss natural line width. (2½,2½,3)
- II. (a) Describe vibrational rotational spectra of diatomic molecule (rigid rotor) giving energy level expression, diagram and appropriate selection rules.
(b) Discuss vibrational spectra of CO₂ and H₂O molecules. (5,3)
- III. (a) Discuss Rotational Raman spectra of diatomic molecule.
(b) Discuss quantum theory of Raman Effect. (4,4)

IV. Write notes on the following :

- (a) Franck-Condon principle.
- (b) Chemical analysis by Electronic spectroscopy. (4,4)

SECTION-B

V. (a) Discuss the theory and instrumentation in NMR spectroscopy.

- (b) What is Chemical shift ? Explain the phenomenon of chemical shift in NMR spectrum of ethyl alcohol.
(5,3½)

VI. (a) Describe NMR spectra of three interacting, namely, ABX nuclei system.

- (b) Write a note on Exchange phenomenon in NMR spectroscopy. (4½,4)

VII. (a) Explain Zero-field splitting of ESR signal.

- (b) Discuss hyperfine interaction in ESR spectroscopy.
- (c) Predict the ESR spectrum resulting from the coupling of an unpaired electron with two equivalent protons.
(2,2,4½)

VIII. (a) Sketch the high resolution spectrum of methyl radical.

- (b) Write an explanatory note on Double resonance techniques in ESR.
- (c) What is meant by Kramer's degeneracy ? Give its significance.
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SECTION-C

IX. Explain the following in brief :

- (a) Why ^{12}C don't show NMR spectrum ?
 - (b) Why TMS is used as one of the internal reference in the NMR spectrum ?
 - (c) Discuss the significance of 'g' factor in ESR spectroscopy.
 - (d) Write Karplus equation and explain the terms involved.
 - (e) Define Anharmonicity constant. Also discuss its significance.
 - (f) Explain Bathochromic shift.
 - (g) Define Raman shift.
 - (h) What is meant by Transition probability ? Explain.
 - (i) Define Coupling constant.
 - (j) Why are anti-Stokes lines less intense than the Stokes lines in Raman spectra ?
 - (k) Describe electronic states and term symbols for the ground state. (11×2=22)
-

Roll No.

Total Pages : 7

21812/N

K-15/2113

ORGANIC CHEMISTRY

Paper-1102T

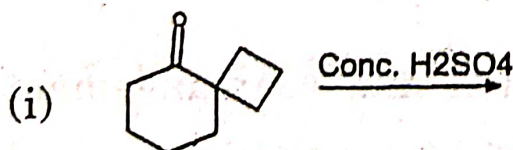
Semester-I

Time Allowed : 3 Hours] [Maximum Marks : 70

Note : The candidates are required to attempt **two** questions each from Sections A and B carrying 12 marks each and the entire Section C consisting of 11 short answer type questions carrying 2 marks each.

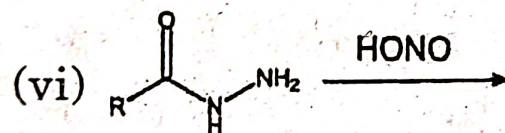
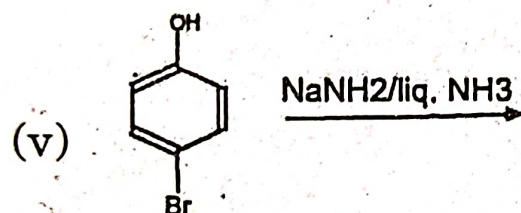
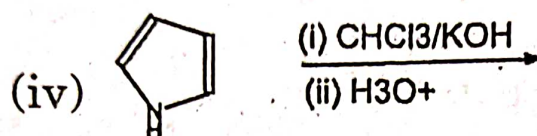
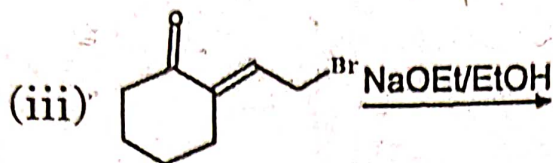
SECTION—A

1. Give the major product and mechanism of the following reactions : 6×2=12

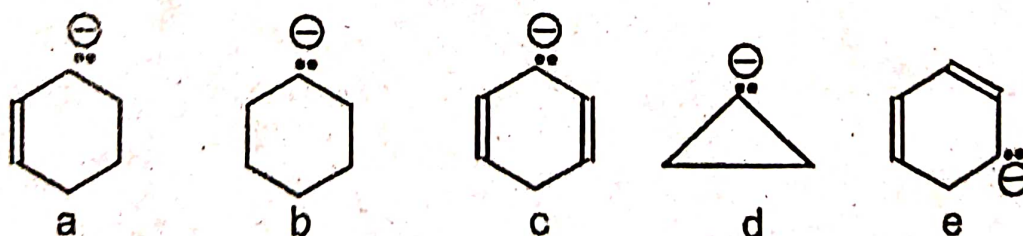


21812/N/593/W/510

[P. T. O.]



2. (a) Arrange the following in decreasing order of their stability and justify your order. 3



- (b) Discuss Auto-oxidation and rearrangement reactions of Free radical. 4

(c) Discuss the bromination of cyclohexene by NBS with and without involving radical initiator. 5

3. (a) Explain Homo-aromaticity, anti-aromaticity and non-aromaticity taking suitable examples. 6

(b) Discuss the bonding in Cyclodextrin and Crown ether complexes along with their applications. 6

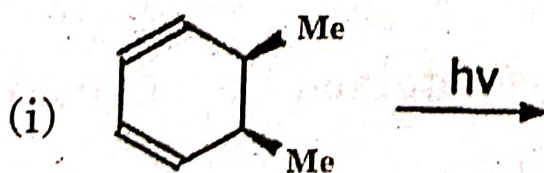
4. (a) Discuss taking suitable reaction, how correct identification of reaction product(s) and trapping of intermediate is essential for determination of mechanism ? 5

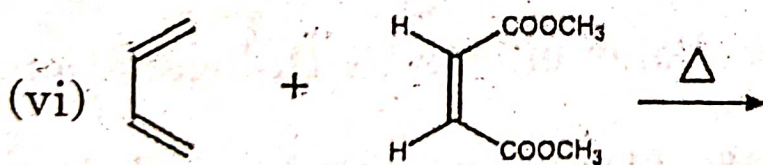
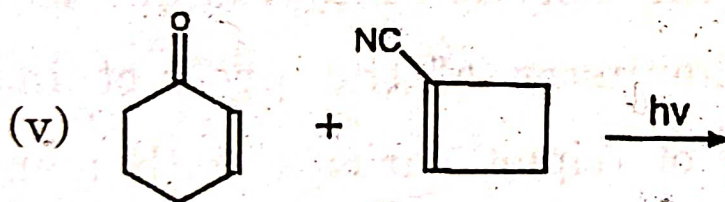
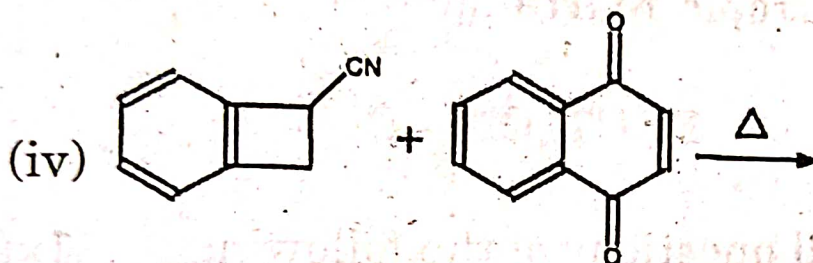
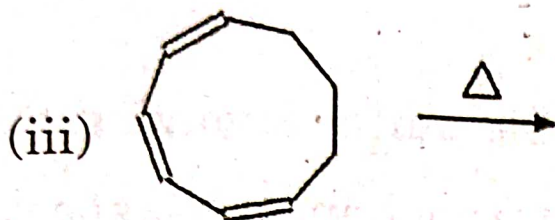
(b) How use of Isotopes in Claisen rearrangement help in determination of reaction mechanism ? 5

(c) What information is obtained from Crossover experiments ? Explain. 2

SECTION—B

5. (a) What are the conditions that favour E_{1cb} mechanism in an elimination reaction ? Illustrate with examples. 4
- (b) In E_2 reaction a threo form gives trans alkene while an erythro form gives a cis olefin. Explain. 4
- (c) Explain why E_2 reaction is most common elimination reaction among E_2 , E_1 and E_{1cb} ? 4
6. Explain the following in detail : 4
- (a) Elimination versus substitution. 4
- (b) Mechanism of Pyrolysis of esters. 4
- (c) Addition elimination mechanism. 4
7. Give product with its stereochemistry in the reactions given below : $6 \times 2 = 12$





8. (a) With the help of FMO method, explain the stereochemistry of [3,3] sigmatropic rearrangements under thermal and photochemical conditions. 4

(b) Using PMO method prove that Cope rearrangement occurs preferentially through the chair-like rather than a boat like transition state. 4

(c) Explain sigmatropic shifts involving carbon moieties with stereochemical aspects in Sigmatropic rearrangement. 4

SECTION—C

9. Attempt all questions of the following : $11 \times 2 = 22$

(i) Discuss the insertion reaction and explain Stereochemistry of the product in the reaction of triplet carbene with trans 2-butene.

(ii) Explain Polar effects in Halogenation.

(iii) Discuss structure and stability of Nitrene.

(iv) Discuss annelation effect.

(v) Explain how NMR is helpful in the detection of Carbocation.

- (vi) How benzene and Carbene are trapped ?
- (vii) Discuss γ -elimination reaction.
- (viii) Discuss the effect of Protic and Aprotic solvent in elimination reaction.
- (ix) Discuss the Hofmann rule with example.
- (x) Draw the Frontier orbitals of 1,3,5-hexatriene.
- (xi) Discuss the Claisen rearrangement.

Total Pages : 3

PC-1241/N

J-9/2116

INORGANIC CHEMISTRY-101

(Semester-I)

Time : Three Hours]

[Maximum Marks : 55

Note : Attempt *two* questions each from Section A and B carrying 8 and 8½ marks each as indicates, and the entire Section C consisting of 11 short answer type questions carrying 2 marks each.

SECTION-A

- I. Discuss various experimental methods of evaluating pi-bonding in metal carbonyl. 8
- II. (a) Draw overlapping of atomic orbitals in nitrite ion resulting bonding and antibonding molecular orbitals.
(b) Draw molecular orbital energy levels in BeH_2 . (4,4)
- III. Draw molecular orbital diagram for the pi-system of an octahedral complex with CO as pi-acceptor ligand. 8
- IV. (a) Write resonance structures, including formal charges for O_3 , NO_2 and SO_3 .
(b) Write MO electron configuration of NO^- ion. (6,2)

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[P.T.O.]

SECTION-B

- V. On the basis of Orgel diagram, give the expected electronic transition of the species $[\text{V}(\text{H}_2\text{O})_6]^{3+}$. 8½
- VI. (a) Which of the following are expected to show Jahn Teller distortion :
- (i) CuCl_4^{4-}
 - (ii) $[\text{Co}(\text{CN})_6]^{4-}$ low spin.
- (b) Explain Ferromagnetism and Antiferromagnetism. 8½
- VII. Cytochrome 'C' is a redox protein but myoglobin is an oxygen storage protein. Justify the statement. 8½
- VIII. What are metalloenzymes ? Give the examples and functions of zinc metalloenzymes. 8½

SECTION-C

- IX. (a) Define Neel point.
- (b) Label Molecular orbital overlap $2p_z - 2p_z$.
- (c) What is Hysteresis ?
- (d) How many unpaired electrons will be present in NO^- ion.
- (e) Mention the natural oxygen carrier other than hemoglobin and myoglobin.
- (f) Name the metalloproteins (enzymes) in which porphyrin ligands are involved.

- (g) What is the origin of the intense colour in $[\text{Cu}(\text{bpy})]$ complex ? bpy = 2, 2'-bipyridine.
- (h) Write the wave function for hydrogen molecule as a linear combination of ionic and covalent functions.
- (i) Explain how the metal complexes act as antimicrobial agents.
- (j) Lower the symmetry of a complex, lower is its magnetic moment, to the spin only value. Explain.
- (k) Which should have comparatively more intense *d-d* transitions :

$\text{Ni}(\text{CO})_4$ or $\text{Fe}(\text{CO})_5$ (11×2=22)

PC-2391/N

L-4/2112

INORGANIC CHEMISTRY

Paper-1101T

(Semester-I)

Time : Three Hours]

[Maximum Marks : 55

Note : Attempt any *five* questions, selecting *two* questions from each of Section-A and Section-B, and entire Section C.

SECTION-A

I. Prove that ground state energy of the hydrogen atom
 $(E_{\min}) = 27 \pi^2 me^4/h^2$. (8)

II. Discuss the electron distribution in the hydrogen molecule ion for symmetry and antisymmetric states. (8)

III. (a) Explain the paramagnetic behavior of oxygen molecule with the help of Lennett's double-quartet approach.

(b) Discuss the π bonding interactions of CO with metal. (4,4)

✓ IV. (a) With the help of appropriate example, discuss the molecular orbital diagram of ML_6 complex indicating σ and π bonding interactions. (8)

SECTION-B

- V. (a) Compare the variation in bond lengths in $[\text{Cu}(\text{NH}_3)_6]^{2+}$ and $[\text{Zn}(\text{NH}_3)_6]^{2+}$.
- (b) Discuss the electronic transition in $[\text{Fe}(\text{H}_2\text{O})_6]^{2+}$ with the help of Orgel diagram. (4½, 4)
- VI. (a) Discuss the necessary conditions for a complex to show orbital contribution in magnetic moment.
- (b) What do you understand high spin-low spin cross over, explain? (4½, 4)
- VII. Show the structure of myoglobin active site? What do you understand by cooperativity, in hemoglobin, explain? (8½)
- VIII. Explain the active site structure and function of :
- (a) Iron-sulfur Protein.
- (b) Carbonic anhydrase. (4½, 4)

SECTION-C

- IX. (i) Write the equation to calculate the lattice energy and explain various terms involve in it.
- (ii) What do you understand by resonance energy?
- (iii) Show the various mode of bonding of cyclopentadienyl ligand with metal.
- (iv) Dinitrogen is a poor π -acid ligand than CO, explain.

- (v) Discuss the delta bonding in metal complexes.
- (vi) Find out the ground state term symbol for d^7 configuration and draw the Orgel diagram for the same.
- (vii) Differentiate between paramagnetism and ferromagnetism.
- (viii) Give *one* example of photochemical reaction of ruthenium complex. ✓
- (ix) Under what condition selection rule for the electronic transitions will break down.
- (x) Name the metal ions present in following proteins.
- (a) Carboxypeptidase,
- (b) hemocyanin.
- (xi) Draw the active site of Peroxidases. ✓ (11×2=22)
-

PC-2395/N

L-4/2112

BIOLOGY FOR CHEMISTS – 1105 T

(Semester-I)

Time : Three Hours]

[Maximum Marks : 55

Note : Attempt *five* questions, *two* questions from each Section A and B, and the entire Section C which is compulsory.

SECTION – A

- I. Give a detailed account of Chemical evolution and rise of living systems. (8)
- II. Write notes on any *two* of the following (4 marks each) :
 - (a) Prokaryotic cell structure.
 - (b) Structure and functions of golgi apparatus.
 - (c) Significance of cell division. (8)
- III. Give an account of Structural polysaccharides with specific reference to cellulose. (8)

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IV. Write notes on any *two* of the following (4 marks each) :

(a) Phospholipids.

(b) Liposomes.

(c) Fluid Mosaic Model of Plasma membrane. (8)

SECTION - B

V. Give an account of Enzymes as biological catalysts. (8.5)

VI. Give a detailed account of primary and secondary structures of proteins. (8.5)

VII. Give a detailed account of Double Helical Structure of DNA. (8.5)

VIII. Write notes on any *two* of the following (4.25 marks each) :

(a) Transcription.

(b) Translation initiation complex.

(c) Genetic code. (8.5)

SECTION - C

IX. Discuss in brief (2 marks each) :

(i) Amino acids.

(ii) Nucleotides.

(iii) Catabolism.

(iv) ATP.

- (v) Glycolysis.
 - (vi) Lipoproteins.
 - (vii) Imino acids.
 - (viii) RNA.
 - (ix) ^{9 member} Purines and ^{6 member} pyrimidines.
_{Al}
 - (x) RNA polymerase.
 - (xi) Biomolecules.
-

PC-2392/N

L-4/2112

ORGANIC CHEMISTRY-1102T

(Semester-I)

Time : Three Hours]

[Maximum Marks : 55

Note : Attempt *two* questions each from Section A and B.
Section C will be compulsory.

SECTION - A

- I. Discuss Generation, Structure, Stability and Stereochemistry of following intermediates
- (a) Carbanions. (4)
 - (b) Carbenes. (4)
- II. What are free radicals? How they are generated? Discuss Polymerisation and Auto-oxidation reactions involving free radicals by taking 2 examples at least? (8)
- III. Write a short note on Fullerenes? What are crown ether complexes, explain by taking suitable examples? How cyclodextrin based compounds are useful? (8)
- IV. How isotopes and catalyst can be used in studying Favorskii, Claisen and Benzyne reaction mechanism ? (8)

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SECTION - B

- V. Differentiate between E1 and E2 mechanism of elimination reaction. Discuss stereochemistry involved in both types of elimination reaction mechanism? (8.5)
- VI. How dehalogenation takes place by using Zinc? How thermal elimination and cyclo-elimination reaction takes place? (8.5)
- VII. What do you mean by Molecular Orbital Symmetry? How Pericyclic reactions are classified? Discuss FMO and PMO approach? (8.5)
- VIII. Discuss Electrocyclic reactions? What do you mean by conrotatory and disrotatory motions? Also discuss selection rules for electrocyclic reactions? (8.5)

SECTION - C

- IX. 1. Write stability of Carbocations.
2. What are Arynes?
3. Discuss Lariat Ethers and Spherands.
4. Write Huckel's Rule.
5. What do you mean by Auto oxidation? Explain by taking example.
6. How free radicals are used in polymerisation reactions?
7. Discuss Woodward-Hoffman Rule.

8. Write mechanism for Nucleophilic aromatic substitution reaction.
9. What is Sigmatropic rearrangements?
10. Predict reaction mechanism of Cope-Rearrangement reactions.
11. What is 2+2 and 4+4 cycloaddition reactions?

(11×2=22)

PC-2393/N**L-4/2112****PHYSICAL CHEMISTRY****Paper-1103T****(Semester-I)****Time : Three Hours]****[Maximum Marks : 55**

Note : Attempt any *two* questions each from Section-A and Section-B. Section C will be compulsory.

SECTION-A

I. (a) Show that:

$$\left(\frac{\partial S}{\partial V}\right)_T = \left(\frac{\partial P}{\partial T}\right)_V$$

Using above relation along with first and second law of thermodynamics. Derive equation of state

$$\left(\frac{\partial U}{\partial V}\right)_T = T \left(\frac{\partial P}{\partial T}\right)_V - P \quad (4.5)$$

(b) Define Partial molar volume. How can it be determined? (3.5)

II. (a) State and explain third law of thermodynamics. Evaluate theoretically the absolute entropy of a gas above its boiling Point. (4)

(b) Write an explanatory note on "General thermodynamic consideration of living systems". (4)

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- III. (a) Explain macro states and microstates with suitable example.
- (b) Discuss the need of statistical thermodynamics.
- (c) Obtain relation between Enthalpy and Partition function. (3+2+3=8)

- IV. (a) Derive expression for translational partition function.
- (b) Obtain expression for energy of a particle possessing vibrational motion. (4+4=8)

SECTION-B

- V. (a) Describe Debye-Huckel theory of ion-ion interactions.
- (b) Write a note on Debye Huckel Onsager theory for non-aqueous solution. (4½, 4)

- VI. (a) Derive expression for Debye-Huckel limiting law. What were the modifications made to extend this law? Discuss the limitations of this extended Debye-Huckel law. (5½)

- (b) Comment on "Ion-triplets and conductance". (3)

- VII. (a) Describe the mechanism of corrosion. Also discuss various methods for the prevention of corrosion.

- (b) Explain the most satisfactory theory for corrosion. Also discuss the merits of this theory. (4½, 4)

VIII. Write notes on the following :

- (i) Parallel plate condensor theory.
- (ii) Fuel cells.
- (iii) Electricity storers.

 $(3, 2\frac{1}{2}, 3)$

SECTION-C

(Compulsory Question)

IX. Explain in brief the followings :

- (a) State the conditions under which partition function can be factorised.
- (b) Explain the term phase space.
- (c) Define characteristics rotational temperature. Also discuss its significance.
- (d) Discuss the significance of ' α ' and ' β ' parameters in the expression of Maxwell-Boltzmaan law.
- (e) Explain mean activity and mean activity coefficient of an electrolyte.
- (f) Define Residual Entropy.
- (g) What is meant by Energy conduction and Ionic conduction.
- (h) How the Efficiency of electrochemical energy convertors can be estimated?

- (i) Obtain relation between Entropy and thermodynamic Probability.
- (j) Describe characteristics of ionic cloud.
- (k) What deficiency of Ist law of thermodynamics led to the development of second law of thermodynamics.

(2×11=22)

Statistical Thermodynamic

(Any Four)

- 1 Discuss the salient features of Debye theory of specific heat of capacity?
- 2 Discuss briefly about the mean distribution and mean square deviation?
- 3 what do you mean by seebeck effect and Thomson effect in irreversible process?
- 4 Discuss about the equilibrium constants and their consumptions in chemical system?
- 5 Discuss theory of Brownian motion and Brownian motion of galvanometer?
- 6 Define entropy production with derivation ?

(4*10=40)

(All Compulsory)

- 1 Define transport parameters?
- 2 Define thermoelectric phenomena?
- 3 Define Debye T³ Law?
- 4 Define equation of state of Solids?
- 5 Define Law of Mass action?

(3*5=15)

Time Allowed:- Three Hours]

[Maximum Marks:40

Note:- The Candidate are required to attempt two questions each from Sections A and B carrying 6 marks each and the entire Section C consisting of eight short answer type questions carrying 2 marks each.

Section A

- I. If $\{a_n\}$ is a sequence such that $\lim_{n \rightarrow \infty} \frac{a_{n+1}}{a_n} = l$ and $|l| < 1$ then $\lim_{n \rightarrow \infty} a_n = 0$. (6)
- II. (a) Prove that the sequence $\{a_n\}$ where $\{a_n\} = \frac{1}{n+1} + \frac{1}{n+2} + \frac{1}{n+3} + \dots + \frac{1}{2n}$ is convergent. (4)
- (b) Show that $\lim_{n \rightarrow \infty} \frac{1}{n} (1 + \frac{1}{2^2} + \dots + \frac{1}{n^2}) = 0$. (2)
- III. (a) Test for convergence or divergence of the series $\frac{2}{1^2}x + \frac{3^2}{2^3}x^2 + \frac{4^3}{3^4}x^3 + \dots, x > 0$. (3)
- (b) Discuss the convergence of the following series $1 + \frac{x}{2^2} + \frac{x^2}{3^2} + \frac{x^3}{4^2} + \dots, x > 0$. (3)
- IV. (a) If a series $\sum_{n=1}^{\infty} a_n$ is absolutely convergent, then it is convergent also. (3)
- (b) Examine the convergence or divergence of the series $\frac{1}{2} + \frac{1.3}{2.4} + \frac{1.3.5}{2.4.6} + \dots$ (3)

Section B

- V. (a) Complete the lower sum $L(P, f)$ of the function $f(x) = x^2$ defined on $[0, 1]$ for the partition $P = \{0, \frac{1}{n}, \frac{2}{n}, \dots, \frac{n}{n}\}$ and find $\lim_{n \rightarrow \infty} L(P, f)$. (4)
- (b) Evaluate $\int_{-\frac{\pi}{2}}^{\frac{\pi}{2}} (\sin|x| - \cos|x|) dx$. (2)
- VI. If f is bounded and integrable in $[a, b]$, then $|f|$ is also bounded & integrable in $[a, b]$.
Moreover $|\int_a^b f dx| \leq \int_a^b |f| dx$. (6)
- VII. (a) Using Mean Value Theorem Estimate the value of $\int_0^1 \frac{\sin x}{1+x^2} dx$. (3)
- (b) Show that the function $f: [0, 1] \rightarrow \mathbb{R}$ defined by $f(x) = \begin{cases} x^2 \cos \frac{1}{x}, & x \neq 0 \\ 0, & x = 0 \end{cases}$ is of bounded variation on $[0, 1]$. (3)
- VIII. A function f of bounded variation on $[a, b]$ is continuous iff V is continuous, where V is a variation function. (6)

Section C

- IX. (a) Show that $\{(1 + \frac{1}{n})^n\}$ is bounded. (3)
- (b) Give an example of divergent sequence $\{a_n\}$ & $\{b_n\}$ such that sequence $\{a_n + b_n\}$ is not divergent. (3)

(c) Show that $\sum_{n=1}^{\infty} \frac{1}{n(n+1)} = 1$.

(d) Discuss the convergence or divergence of the following series $\sum_{n=2}^{\infty} \frac{1}{\log n}$.

(e) State Cauchy's root test.

(f) Define absolute convergence of a series. Give example

(g) Find the lower and upper sum for the function $f(x) = \begin{cases} 0, & \text{when } x \text{ is rational} \\ 1, & \text{when } x \text{ is irrational} \end{cases}$ on $[-1, 1]$ by dividing it into n equal sub intervals.

(h) Prove that a function of bounded variation is bounded.

(2×8=16)