

Exam Code: 215224
(30)

Paper Code: 4225

Programme: Master of Science(Botany)
Semester-IV

Course Title: Plant Anatomy

Course Code: MBTL-4071 ✓

Time Allowed: 3 Hours

Max Marks: 40

Note: Attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any Section. All questions carry equal marks (Eight marks each). Draw well labelled diagrams wherever necessary.

SECTION-A

1. Define anomalous secondary growth. Explain it giving suitable example of deviation from normal secondary growth due to:
 - a. Abnormal functioning of cambium
 - b. Formation of inter-xylary phloem. 8
2. Give an illustrated account of node-internode transition and formation of leaf and branch traces from the nodal region. 8

SECTION-B

3. Explain anatomy and chemistry of lignification. 8
4. What is wood? Elucidate the physical and anatomical features of any four hardwoods of India. 8

SECTION-C

5. Discuss following:
 - a. Elucidate the anatomy of accessory whorls of flower.
 - b. Discuss the anatomical features of hydrophytes. 8
6. Discuss the ultra structural surface features of fruits and their importance in plant taxonomy. 8

SECTION-D

7. Explain following:
 - a. What are lenticels? Discuss their structure and function.
 - b. Discuss the distribution, structure and function of Laticifers. 4X2=8
8. Give an illustrated account of modifications in anatomical features of roots in epiphytic plants, coralloid roots and mycorrhizal roots. 8

Exam Code: 215224
(30)

Paper Code: 4226

Programme: Master of Science(Botany)
Semester-IV

Course Title: Structure and Metabolism of Plant Hormones

Course Code: MBTL-4072 ✓

Time Allowed: 3 Hours

Max Marks: 40

Note: Attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any Section. All questions carry equal (8) marks. Draw well labelled diagrams wherever necessary.

Section A

1. Write a note on the following:
 - a. Bioassay, its uses and limitations
 - b. Difference between hormones and plant growth regulators (4+4)
2. Give a detailed account of diversity in biosynthetic pathways of auxins. 8

Section B

3. Write a detailed note on:
 - a. Physiological roles of gibberellins.
 - b. Discovery of gibberellins (4+4)
4. Discuss biosynthesis and regulation of cytokinins. 8

Section C

5. Write a note on:
 - a. Conjugation, catabolism and inhibitors of ethylene
 - b. Biosynthesis of brassinolide (4+4)
6. Describe biosynthesis and physiological roles of ABA in plants. 8

Section D

7. Give an account of
 - a. Inhibitors of Jasmonic acid and its regulation in plants
 - b. Biosynthesis of Jasmonic acid. (4+4)
8. Discuss biology of genetic transformation by *Agrobacterium tumefaciens*. 8

Exam Code: 215224
(30)

Paper Code: 4227

Programme: Master of Science(Botany)
Semester-IV

Course Title: Plant Tissue Culture and Biotechnology

Course Code: MBTL-4073 ✓

Time Allowed: 3 Hours

Max Marks: 40

Note: Attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section. Each question carries equal (8) marks.

Section A

1. Give a detailed account of different stages of micro propagation. (8)
2. What do you understand by Somatic Embryogenesis? With the help of suitable diagrams. Give different steps for the production of somatic embryogenesis and discuss its usefulness. (8)

Section B

3. Define Somaclonal Variations. Discuss in detail method for production of pathogen free plants through tissue culture. (8)

4. What do you understand by "Synthetic Seeds" ? Give an account for production of synthetic seeds and their applications. (8)

Section C

5. What do you mean by Transgenesis? Discuss in detail different methods widely used for Vectorless Transgenesis. (8)
6. Describe Shikonin biosynthesis in detail. (8)

Section D

7. Write illustrated notes on the following: (4 marks each)
 - a) Cryoprotectants
 - b) Gene banks (8)
8. Discuss the role of biotechnology in agriculture and human health. (8)

Exam Code: 215224
(30)

Paper Code: 4228

Programme: Master of Science(Botany)
Semester-IV

Course Title: Analytical Techniques

Course Code: MBTL-4074

Time Allowed: 3 Hours

Max Marks: 40

Note: Attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section. Each question carries 8 marks.

SECTION-A

1. Principle and application of
 - a. Light microscope
 - b. Phase contrast microscope4+4
2. Differentiate between scanning electron and transmission electron microscope along with diagrams. 8

SECTION-B

3. Discuss principle, working and applications of high-pressure liquid chromatography (HPLC). 8

4. Discuss principle, working and applications of gas chromatography. 8

SECTION-C

5. Write in detail principle and applications of NMR. 8
6. Write in detail principle, working and applications of atomic absorption spectroscopy. 8

SECTION-D

7. Discuss principle, working and application of polymerase chain reaction. 8
8. Discuss principle, working and application of northern blotting. 8

Exam Code: 215224
(30)

Paper Code: 4229

Programme: Master of Science(Botany)
Semester-IV

Course Title: Diversity and Biology of Angiosperms

Course Code: MBTL-4075

Time Allowed: 3 Hours

Max Marks: 40

Note: Attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any Section. All questions carry equal marks (Eight marks each). Draw well labelled diagrams wherever necessary.

SECTION-A

1. What do you mean by phylogenetic classification?
Elucidate with any system. 8
2. Define the term cladistics. Explain the role of cladistics in
plant taxonomy. 8

SECTION-B

3. Explain the principles of plant nomenclature in detail. 8
4. Discuss various theories of origin of angiosperms. 8

SECTION-C

5. Discuss the role of pollen structure in angiosperm classification with suitable diagrams. 8
6. What is biosystematics? Discuss the steps in biosystematics analysis and define various taxonomic categories. 8

SECTION-D

7. Discuss the phylogeographic classification of India. Give principles and practices of phytogeography. 8
8. What do you mean by Taxonomic tools? Explain with examples. 8

Exam Code: 215224
(30)

Paper Code: 4231

Programme: Master of Science(Botany)
Semester-IV

Course Title: Immunology

Course Code: MBTL-4076 (Opt-B)

Time Allowed: 3 Hours

Max Marks: 40

Note: Attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section. Each question carries 8 marks.

Section A

1. What do you mean of immunodeficiency disease?
Describe Secondary immunodeficiency Disease?
2. Give characteristic features of innate immunity?

Section B

3. Discuss the following: -
 - a. Prerequisites for immunogenicity
 - b. Molecules that enhance immunogenicity
4. Write a note on antigen recognition by cells of innate immunity & adaptive immunity?

Section C

5. Draw neat & clean general diagram of immunoglobulin. Discuss different antibodies, their biological functions and concentration in human body?
6. Write notes on the following:
 - (a) Monoclonal antibodies
 - (b) Haematopoiesis
 - (c) Isotypes
 - (d) Cross reactivity

Section D

7. Discuss the complement system in details?
8. Write a detail note on antigen processing and presentation?

Exam Code: 210404
(30)

Paper Code: 4217

Programme: Master of Science(Chemistry)
Semester-IV

Course Title: Advanced Inorganic Chemistry

Course Code: MCHL-4081 ✓

Time Allowed: 3 Hours

Max Marks: 60

Note: Students are required to attempt any Five questions selecting one question from each section. The fifth question may be attempted from any section. Each question carries equal (12) marks.

Section-A

1. a. Discuss Adomsons rules and discuss Photo substitution reactions of Cr(III)-Polypyridyls 8
- b. Define kasha rules and discuss Thexi state with suitable example. 4
2. a. Discuss Photo synthesis in plants and Bacterio chlorophyll photosynthesis. 8

- b. Explain energy dissipation by radiative and non-radiative processes. 4

Section B

3. a. Discuss the mechanism and stereochemistry of oxidative addition reactions. 8
b. Discuss migration (Insertion) reactions such as insertion of CO into M-H/CH₃ bonds. 4
4. a. Explain with examples the insertion of SO₂ and CO₂ in Transition Metal complexes. 8
b. What are cyclometallation and orthometallation reactions? Explain with examples. 4

Section C

5. a. Discuss various techniques to characterize the hydride complexes. 8
b. Discuss Chemical behavior of Hydride compounds. 4

6. a. Discuss with examples
- 1) Ionic Hydrides
 - 2) Covalent Hydrides
 - 3) Transition metal Hydrides
 - 4) Metal Hydrides 8
- b. Explain complexes of Borohydrides and aluminohydrides with examples. 4

Section D

7. a. Discuss and draw the catalytic cycles of hydroformylation of alkene. 8
- b. Discuss the carbonylation reaction of butadiene for adipic acid synthesis. 4

8. a. Discuss Ziegler-Natta polymerisation of ethylene and propylene. 8
- b. Discuss hydrocyanation of unsaturated compounds. 4

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KMV-II

Exam Code: 210404
(30)

Paper Code: 4218

Programme: Master of Science(Chemistry)
Semester-IV

Course Title: Chemistry of Natural Products

Course Code: MCHL-4082 ✓

Time Allowed: 3 Hours

Max Marks: 60

Note: Attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section. Each question carries 12 marks.

Section-A

1. (a) Justify the meta orientation of hydroxyl groups in naturally occurring phenols. (6)
- (b) Give biosynthesis of :(i) Isopropyl pyrophosphate (IPP) and (ii) Geranyl pyrophosphate (GPP) (6)
2. (a) Describe chemistry of borneol and its synthesis from geranyl pyrophosphate. (8)

b) State and explain isoprene rule with suitable example. (4)

Section-B

3. (a) Give synthesis and physiological significance of Oestrone. (6)
- (b) Describe chemistry, various degradation and synthesis methods used for structure elucidation of Camphor. (6)
4. (a) What do you understand by Progesterone and give its synthesis method from cholesterol? (6)
- (b) What is nicotine? Prove chemically that N-methyl pyrrolidine moiety in case of Nicotine is linked to Pyridine ring through α - position and not through β -position. (6)

Section-C

5. (a) Explain synthesis of Penicillin as carried out by Sheehan and others. (6)
- (b) What are Chlorophyll-a and Chlorophyll-b? What is the structural difference between two and how are they identified in the laboratory? (6)
6. (a) What are Prostaglandins? Describe their biological significance. Give Corey's synthesis of Prostaglandin E₂. (6)
- (b) Give clinical properties of penicillin, Streptomycin, chloramphenicol and tetracyclines with suitable examples of their derivatives. (6)

Section-D

7. Explain general method for ring size determination of sugars by taking examples of lactose and sucrose. (12)

8. (a) Discuss the structure of RNA with suitable diagram.

(6)

(b) Describe replication of DNA in brief.

(6)

Exam Code: 210404
(30)

Paper Code: 4219

Programme: Master of Science(Chemistry)
Semester-IV

Course Title: Chemistry of Materials

Course Code: MCHL-4083 ✓

Time Allowed: 3 Hours

Max Marks: 60

Attempt five questions, selecting least one question from each Section. The fifth question may be attempted from any section. Each question carries equal marks.

Section A

1. a) Discuss band theory of solids and explain conductance on the basis of this theory
b) Write a note on color centres. 6X2=12
2. a) What are stoichiometric and non stoichiometric defects Discuss with examples.
b) i) Differentiate decomposition and dehydration reactions -
ii) Reactions in organic solids. 6X2=12

Section B

3. Differentiate between the following
a) Chain and step growth polymerization

- b) Plasticity and elasticity
- c) Doped and undoped polymers 4X3=12
- 4. a) How can you determine the molecular mass of polymer by viscometer method?
- b) Discuss number average and weight average methods of polymer molecular weight determination. 6X2=12

Section C

- 5. a) Write a note on different type of oxide glasses and their practical applications
- b) How is borosilicate glass different from ordinary glass? 6X2=12
- 6. a) What are refractories? What are their properties and applications?
- b) Discuss properties composition and applications of metallic glasses. 6X2=12

Section D

- 7. a) How is ceramic method different from chemical methods?
- b) Discuss BCS theory in detail. 6X2=12
- 8. a) Write a note on room temperature superconductors.
- b) Differentiate sol-gel and co-precipitation method
- c) Write a note on magnetic nanomaterials and their practical applications 4x3=12

Exam Code: 213204
(40)

Paper Code: 4251

Programme: Master of Commerce
Semester-IV

**Course Title: Entrepreneurship Development and Project
Management**

Course Code: MCML-4091

Time Allowed: 3 Hours

Max Marks: 80

Note: Students are required to attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section. Each section carries (16) equal marks.

Section A

1. Discuss the importance of ethics and values for an entrepreneur.
2. What skills and traits should be present in an entrepreneur?

Section B

3. What are the causes of time and cost overrun? How can this be avoided?
4. Explain the role of an entrepreneur in economic development of a country

Section C

5. What is social cost benefit analysis? Discuss the various approaches of social cost benefit analysis.
6. What is feasibility study? How can it be helpful in formulation of marketing plan.

Section D

7. How is risk identified, assessed and managed in project management?
8. What is project budgeting? How are cash flows managed under project management?

Exam Code: 213204
(40)

Paper Code: 4253

Programme: Master of Commerce
Semester-IV

Course Title: International Financial Management

Course Code: MCML-4093 (Opt-A I) ✓

Time Allowed: 3 Hours

Max Marks: 80

Note: Students are required to attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section. Each section carries (16) equal marks.

SECTION A

1. Discuss the nature and scope of International Finance. Critically examine Alternative Exchange rate system. (16)
2. Explain the purchasing power parity theory of foreign exchange rate. Is the theory relevant in the present day global inflationary conditions? (16)

SECTION B

3. What is currency forecasting? Discuss the relationship between forward and future spot market. (16)

4. "Balance of Payment always balances". Explain critically. (16)

SECTION C

5. Briefly explain various techniques of assessing country risk. What are the various economic and political factors posing risk? (16)
6. Define risk hedging? What are the various techniques to measure Translation Exposure? (16)

SECTION D

7. Write a detailed note on recent developments in derivatives market in India. (16)
8. Write a short note on:
- i) Currency futures
 - ii) Options market (16)

Exam Code: 213204
(40)

Paper Code: 4254

Programme: Master of Commerce
Semester-IV

Course Title: Financial Markets and Financial Services

Course Code: MCML-4094 (Opt-A II) ✓

Time Allowed: 3 Hours

Max Marks: 80

Note: Attempt FIVE questions, selecting at least one question from each section. The fifth question may be attempted from any section. Each question carries 16 marks.

SECTION-A

1. What do you understand by 'Financial System'? Discuss various components of a developed financial system. (16)
2. What are the techniques of monetary control available with Reserve Bank of India? (16)

SECTION -B

3. Discuss the extent to which recommendations of Narasimham Committee (1991) have been implemented. (16)

Exam Code: 213204
(40)

Paper Code: 4255

Programme: Master of Commerce
Semester-IV

Course Title: Corporate Tax Law and Planning

Course Code: MCML-4095 (Opt-A III)

Time Allowed: 3 Hours

Max Marks: 80

Note: Attempt FIVE questions, selecting at least one question from each section. The fifth question may be attempted from any section. Each question carries 16 marks.

SECTION -A

1. Tax Management is essential for every assessee but Tax Planning is optional. Comment.
2. What are the necessary adjustments to be made to Net Profit of the Company to convert it into Book Profits for computation of Minimum Alternate Tax? Also explain the provisions regarding tax credit in respect of MAT.

SECTION -B

3. "From tax point of view it is always better to form a partnership firm and not a company". Do you agree with the statement?

4. (i) What do you understand by "Pay as you earn" Scheme? Explain clearly the important provisions of the Income Tax in this connection.
(ii) what are the provisions regarding deduction of tax at source under head "Salaries"? What would be the consequences if tax is not deducted at source?

SECTION -C

5. Explain the tax planning:
 - (i) In relation to Capital Structure
 - (ii) In relation to Dividends
 - (ii) In relation to Inter-Corporate Dividends
6. "Tax incentives have been provided for amalgamation to amalgamating company, amalgamated company and to the shareholders of the amalgamating company" Explain.

SECTION -D

7. What do you understand by the term Managerial Decisions? Explain the tax planning in respect of Sale of Assets, Replace and Renovation.
8. Write an essay on the dividend policy of a company.

Exam Code: 213204
(40)

Paper Code: 4252

Programme: Master of Commerce
Semester-IV

Course Title: E-Commerce

Course Code: MCML-4122 ✓

Time Allowed: 3 Hours

Max Marks: 80

Note: Candidates are required to attempt five questions, selecting at least one from each section. The fifth question may be attempted from any section. Each question carries 16 marks.

Section A

1. What is E-Commerce? why every business required online platform to run business? (16)
2. Explain the components of E-Commerce with merits and demerits. (16)

Section B

3. What is E-marketplace and explain different functions of E-marketplaces? (16)
4. Explain different methods of payment with security features. (16)

SECTION C

5. What are the major threats in Online business and shopping? what security measure should be adopted from client and vendor end ? (16)
6. What is Digital Signatures and how it could be helpful to reduce the degree of threats in E-commerce ? (16)

SECTION D

7. What is Business Process Reengineering, how it could be helpful for the business models? (16)
8. Explain case study for e-Retailing in E-Commerce. (16)

Exam Code: 206704

Paper Code: 4270

Programme: Master of Science (Computer Science)

Semester IV

Course Title: Advanced Software Engineering

Course Code: MCSL-4111

Time Allowed: 3 Hours

Max. Marks: 80

Attempt five questions in all, selecting one question from each section.
The fifth question may be attempted from any section. Each question carries 16 marks.

(Section A)

Q1) What is quality assurance? How it is different from quality control?
Explain various software quality assurance activities. (16)

Q2) a) Explain various CMM levels in detail

b) What is software reliability? (12, 4)

(Section B)

Q3) a) What are various Software Configuration Management items?

b) What is software risk? How it is projected? (8 X 2 = 16)

Q4) Explain RMMM plan in detail. (16)

(Section C)

Q5) Explain conceptual model of UML in detail. (16)

Q6) Explain various structural diagrams in UML. (16)

(Section D)

Q7) What is activity diagram? Explain with appropriate examples. How
it is different from interaction diagram? (16)

Q8) Explain:-

a) State Diagram

b) Sequence diagram (2 X 8 = 16)

Exam Code: 206704
(20)

Paper Code: 4271

Programme: Master of Science (Computer Science)
Semester-IV

Course Title: Microprocessor and its Applications

Course Code: MCSL-4112

Time Allowed: 3 Hours

Max Marks: 80

Note: Attempt five questions, selecting at least ONE question from each section. Each question carry equal (16) marks.

SECTION- A

1. What is a microcomputer explain the block diagram of a microcomputer and explain its various components?
(16)
2. Explain the role of microprocessor in a computer system discuss application of microprocessor in other industries?
(16)

SECTION- B

3. (a) Explain the description of different pins of 8086 microprocessor for minimum mode system?
(b) Describe the sequence of instruction execution of 8086 microprocessor?
(8,8)

4. (a) Explain the internal architecture of 8284 external system clock generator?
(b) Explain bus cycle in detail? (8,8)

SECTION- C

5. Discuss the following
(a) Read Bus Cycle of a 8086
(b) Write Bus Cycle of 8088 (8,8)
6. Explain the following
(a) Procedure of generating memory
(b) Dynamic Ram (8,8)

SECTION- D

7. What is the role of 8255a chip discuss the block diagram of 8255 a chip and explain different units of this chip? (16)
8. Discuss the different type of interrupt and need of IVT in detail? (16)

Exam Code: 206704
(20)

Paper Code: 4272

Programme: Master of Science (Computer Science)
Semester-IV

Course Title: Foundation of Statistical Computing

Course Code: MCSL-4113

Time Allowed: 3 Hours

Max Marks: 80

Attempt five questions out of eight. Atleast one question from each section. All question carry equal marks.

Section-A

1. (a) Discuss role of programming and statistical softwares. 8
- (b) Discuss sampling and cumulative statistics. 8
2. What is a vector? How we can perform operations on vectors in R Programming. Discuss using coding examples. 16

Section-B

3. What is a list? How can we create lists in R Programming? Discuss general list operations and accessing of list components and values using examples. 16

4. Discuss common string operations. How we can perform Matrix-like operations in frames, and Apply functions to Data frames. Discuss using examples. 16

Section-C

5. Explain if else in R Programming. Discuss scan() and readline() Functions. 16
6. Discuss user defined of R Programming with examples. 16

Section-D

7. Discuss graphics features of R Programming. Explain various high level and low level plot functions. 16
8. Discuss analytical algorithms for predictive analysis and modeling. 16

Exam Code: 100084
(20)

Paper Code: 4281

Programme: Master of Arts (Cosmetology)
Semester-IV

Course Title: Hand and Feet Care

Course Code: MCYM-4141 ✓

Time Allowed: 3 Hours

Max Marks: 40

Attempt five questions in all, selecting one question from each section. The fifth question may be attempted from any section. Each question carries 8 marks.

Section-A

1. Explain and draw the structure of Nail. 8x1=8
2. Explain the different Nail shapes in detail.

Section-B

3. Explain:-
 - (a) What are the Precautions for doing manicure? 4
 - (b) Clean-up and sanitation for Manicure. 4
4. How do you ^{do} Professional manicure step up step? 8

Section-C

5. What are the precautions to be followed while doing Pedicure?
6. What are two Basic steps for Pedicure preparation? Also explain the clean up and sanitation for pedicure?

8x1=8

Section-D

7. What are the measures to be followed for Nail technician for doing nail Extension?
8. Explain in detail Nail Treatment feasible in a salon?

8x1=8

19-5-2023 (Eve)

Exam Code: 100084
(20)

Paper Code: 4282

Programme: Master of Arts (Cosmetology)
Semester-IV

Course Title: Therapeutic Nutrition

Course Code: MCYM-4142 ✓

Time Allowed: 3 Hours

Max Marks: 40

Attempt five questions in all, selecting atleast one question from each section. The fifth question may be attempted from any section. All questions carry equal marks.

Section-A

1. Describe the aim and scope of Nutrition. 8
2. What are the various Dimensions and indicators of Health. 8

Section-B

3. Discuss the anthropometric method of Nutritional Assessment. 8
4. Describe any one indirect method of Nutritional Assessment. 8

Section-C

5. Discuss the effects of Malnutrition during Vitamin A deficiency and corresponding preventive strategies introduced by Govt. of India. 8
6. Discuss the effects of Malnutrition during Nutritional Anemia and corresponding preventive strategies introduced by Govt. of India. 8

Section-D

7. Plan a diet-chart for Pregnant lady. 8
8. Plan a diet-chart for an infant. 8

Exam Code: 100084
(20)

Paper Code: 4283

Programme: Master of Arts (Cosmetology)
Semester-IV

Course Title: Ayurvedic Products for Skin and Hair

Course Code: MCYM-4143 ✓

Time Allowed: 3 Hours

Max Marks: 40

Attempt five questions in all, selecting one question from each section. The fifth question may be attempted from any section. Each question carries 8 marks.

Section-A

1. Name and explain the Ayurveda Home products for Healthy hair and skin? Any four.
2. Define Ayurveda? What is the Importance of Ayurveda?
(8*1=8)

Section-B

3. Write a short Note on the following:-
 - a. Prickly Heat
 - b. Boils and Pustules
 - c. Hyper sensitive skin
 - d. Warts.

(8*1=8)

4. How will you prepare the Ayurvedic Mask and Packs for the following:-
(a) Sun burns
(b) Muddy skin (8*1=8)

Section-C

5. Write a short Note on:-
a. Dry Hair
b. Baldness
c. Lesion of Hair
d. Early grey Hair (8*1=8)
6. Explain the following:-
a. Ayurvedic shampoo for oily Hair
b. Ayurvedic Hair oil for Brittle Hair

Section-D

7. What precautions should be taken while filling and packing Masks and Packs?
8. Explain the procedure for filling and packing creams and Lotions. (8*1=8)

Exam Code: 213104
(20)

Paper Code: 4256

Programme: Master of Arts (Economics)
Semester-IV

Course Title: Economics of Planning

Course Code: MECL-4171

Time Allowed: 3 Hours

Max Marks: 80

Note: Candidates are required to attempt five questions, selecting at least one from each section. The fifth question may be attempted from any section. Each question carries 16 marks.

Section A

1. 'A Planned economy is more efficient than an Unplanned economy'. Elucidate the statement.
2. Out of various plans, which would you prefer for the developing countries like India?

Section B

3. What kind of technology would be most relevant for a heavily populated underdeveloped country? Comment.
4. Write channels, importance, and problems in the transfer of technology.

Section C

5. Examine the important uses and drawbacks of Cost-Benefit Analysis for plan formulation.
6. Define shadow prices and discuss the UNIDO Approach of calculating such prices.

Section D

7. Discuss and evaluate Harrod Growth Model.
8. Explain the composition, functions, and strategy of NITI Aayog.

Exam Code: 213104
(20)

Paper Code: 4257

Programme: Master of Arts (Economics)
Semester-IV

Course Title: International Economics-II

Course Code: MECL-4172 ✓

Time Allowed: 3 Hours

Max Marks: 80

Note: Candidates are required to attempt five questions, selecting at least one from each section. The fifth question may be attempted from any section. Each question carries 16 marks.

Section A

1. What is meant by balance of payment? Do you agree that balance of payment is always in balance.
2. Explain expenditure reduction and expenditure switching policies. How can they correct BOP deficit.

Section B

3. Explain relative merits and demerits of fixed and flexible exchange rate
4. Explain in detail PPP theory for determination of exchange rate.

Section C

5. What is custom union? What are static and dynamic effects of custom union?
6. Critically examine the achievements of EU.

Section D

7. What is WTO? What are its functions? Evaluate WTO from the view point of developing countries.
8. Explain in detail Present Monetary system along with its problems.

Exam Code: 213104
(20)

Paper Code: 4258

Programme: Master of Arts (Economics)
Semester-IV

Course Title: Punjab Economy

Course Code: MECL-4173

Time Allowed: 3 Hours

Max Marks: 80

Note: Attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section. Each question carries 16 marks.

Section —A

1. Discuss the structure of Punjab Economy .
2. Write down the main features of Population in Punjab.

Section-B

3. What is meant by Green Revolution ? Discuss its achievements and shortcomings in connection with Punjab.
4. Discuss the need and problems of contract farming in Punjab.

Section—C

5. Critically examine the Industrial Policy 2009 of Punjab Government
6. Evaluate the potentials and problems of industrial development in Punjab.

Section-D

7. What are the reasons for Fiscal Crisis in Punjab ? How can we overcome this problem ?
8. Critically examine the Centre —state financial relations with special reference to Punjab.

Exam Code: 213104
(20)

Paper Code: 4259

Programme: Master of Arts (Economics)
Semester-IV

Course Title: Econometrics

Course Code: MECL-4174 (Opt-VIII) ✓

Time Allowed: 3 Hours

Max Marks: 80

Note: Attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section. Each question carries 16 marks.

Section —A

1. When do you mean by Econometrics? Explain the nature and scope of Econometrics. 4,12
2. State and prove Gauss Markov theorem. 16

Section —B

3. Explain the factors responsible for the problem of heteroscedasticity. Also explain its consequences on OLS estimates. 8,8
4. Give the main points of relationship between ANOVA and Regression. Also explain any two applications of it in regression. 6,10

Section —C

5. What do you mean by stationary of time series? Explain methods to detect the non-stationary time series. 4,12
6. What do you mean by causality? Explain Sims version of causality in detail. 16

Section —D

7. What are dummy variable? Explain various applications of dummy variables. 16
8. What do you mean by Panel data? Discuss in detail the LSDV estimation procedure. 16

Eve.

26/5/23

Exam Code: 213104
(20)

Paper Code: 4260

Programme: Master of Arts (Economics)
Semester-IV

Course Title: Economics of Public Enterprises

Course Code: MECL-4175 (Opt-X) ✓

Time Allowed: 3 Hours

Max Marks: 80

Question Paper comprises of 4 sections.

Candidates are required to attempt five questions , selecting at least one question from each section. The fifth question may be attempted from any section. Each question carries 16 marks.

Section-A

1. Discuss the role of Public Enterprises in national development with special reference to their social objectives.
2. Explain in detail the practical approaches in project selection in a public sector.

Section-B

3. What are the principal forms of organization of PE's. State the characteristics and merits of each.

4. Discuss in detail Financial Management in Public Enterprises.

Section-C

5. Explain in detail how the performance of PE's is evaluated.
6. Discuss the Pricing Policy of PE's.

Section-D

7. Discuss the problem of "Autonomy and public accountability" of Public corporations in India.
8. Discuss the growth, performance and pricing policies of steel industry in India overtime.

Exam Code: 216404
(20)

Paper Code: 4171

Programme: Master of Arts (English)
Semester-IV

Course Title: Modern Literary Theory

Course Code: MENL-4211 ✓

Time Allowed: 3 Hours

Max Marks: 64

Section A

Note: Attempt any four questions by choosing at least one from each unit in about 150 words each. Each question carries 4 marks.

1. a. Define 'female' as per Toril Moi's essay prescribed for your study?
- b. What do you understand by the term Deconstruction?
- c. For the reader to be 'born', it is necessary that the author be 'dead'. Comment.

- d. Do you think Barthes takes the 'reader' quite uncritically?
- e. Write a short note on the Representation of the Orient in literature.
- f. Discuss Freud's effect on literary writings traced by Trilling. (4x4=16)

Section B

Answer any 1 question in about 600 words.

2. How does Toril Moi differentiate between "feminism", "femaleness" and "femininity"?
- Or
3. What are the three waves of Feminism? Explain in detail. (1x12 =12)

Section-C

Answer any 1 question in about 600 words.

4. What is the relevance of deconstruction as a theory of literature and its use in practical analysis of works of literature?

Or

5. Critically examine Roland Barthes' ideas as expounded in The Death of the Author. (1x12 =12)

Section D

Answer any 1 question in about 600 words.

6. Examine critically the ideas presented in Said's Orientalism.

Or

7. How has the Orient been projected in the Western writings according to Edward Said in Crisis. Comment.

(1x12 =12)

Section E

Answer any 1 question in about 600 words.

8. Freud and Literature brilliantly explores vital areas of Freud's thought on Art. Discuss.

Or

9. Bring out the reciprocal relationship between Freud and Literature. (1x12 =12)

Exam Code: 216404
(20)

Paper Code: 4172

Programme: Master of Arts (English)
Semester-IV

Course Title: American Literature

Course Code: MENL-4212 ✓

Time Allowed: 3 Hours

Max Marks: 64

SECTION-A

Attempt any 4 out of the following in about 150 words :

1. What is the symbolic significance of Grass in 'Song of Myself'?
2. " You can't eat the orange , and throw the peel away- a man is not a piece of fruit"Comment.
3. What is the purpose of "The Custom House"?
4. Comment on the role of Biff.
5. How does Frost depict his regionalism in his poetry ?
6. Who does the speaker address in 'Crossing Brooklyn Ferry'?
(4x4=16)

SECTION -B

Attempt either of the two in about 600 words :

7. (a) "A poem begins in delight but ends in wisdom."
Analyse Robert Frost's poems critically in this light.
Or

(b) Illustrate the use of metaphors and symbols by Whitman in the prescribed poems.

(1x12= 12)

SECTION -C

Attempt either of the two in about 600 words :

8. (a) Comment upon the ending of The Scarlet Letter.
Or
(b) How does the experience of being an outcast change Hester and provide her a new perspective ? Discuss.

(1X12= 12)

SECTION -D

Attempt either of the two in about 600 words :

9. (a) Would you regard Willy Loman as a tragic hero in Death of a Salesman?
Or
(b) Discuss Death of a Salesman as a blend of realism and expressionism.

(1x12=12)

SECTION -E

Write a note on any 3 of the following in about 150 words each. Each part carries 4 marks.

10. (a) Elegy
(b) Metaphor
(c) Elements of Modernism in American Literature
(d) Transcendentalism

(4x3=12)

Exam Code: 216404
(20)

Paper Code: 4173

Programme: Master of Arts (English)
Semester-IV

Course Title: Postcolonial Literature

Course Code: MENL-4213

Time Allowed: 3 Hours

Max Marks: 64

SECTION-A

Note : Answer any four choosing at least one from each unit. Answer each question in 150 words.

1. Discuss the role of Nwoye in Things Fall Apart.
2. Comment on the opening of Things Fall Apart.
3. Compare and contrast the characters of Lenny's mother and Godmother in The Ice-Candy Man.
4. Comment on Bapsi Sidhwa's use of narrative technique in The Ice-Candy man.
5. Discuss Antoinette's farewell to Coulibri in Wide Sargasso Sea.

6. Comment on the role of beauty in Wide Sargasso Sea.

(4x4=16)

Section B

Note : Answer any one in 600 words.

7. (a) Discuss the significance of the title of Things Fall Apart.

(b) What types of conflict are present in Things Fall Apart. (1x12=12)

Section C

Note : Answer any one in 600 words.

8. (a) Trace the socio-cultural background of the Parsi paradox in The Ice-Candy Man.

(b) What is postcolonial literature? Discuss the term in relation to Bapsi Sidhwa's The Ice-Candy Man.

(1x12=12)

Section D

Note : Answer any one in 600 words.

9. (a) Discuss the theme of power and identity in Wide Sargasso Sea.
(b) Discuss Wide Sargasso Sea as a postcolonial novel.
(1x12=12)

Section E

10. a. Write a note on Post colonialism.

Or

Write a note on Colonialism. (1x4=4)

- b. Write a note on Subaltern.

Or

Write a note on Feminism. (1x4=4)

c. Write a note on Patriarchy.

Or

Discuss the major themes in Postcolonial discourse.

(1x4=4)

(4x3=12)

Exam Code: 216404
(20)

Paper Code: 4174

Programme: Master of Arts (English)
Semester-IV

Course Title: Indian Writing in English

Course Code: MENL-4214 ✓

Time Allowed: 3 Hours

Max Marks: 64

Section A

Note: Attempt any four questions. Each question carries 4 marks. Answer each question in about 150 words:

1. Give a brief pen portrait of Ms. Pushpa TS in the poem Goodbye Party for Miss Pushpa TS by Nissim Ezekiel.
2. How would you account for Kamala Das' nostalgia in the poem My Grandmother 's House?
3. Attempt a brief character sketch of Velan in The Guide by R. K Narayan.
4. Describe in your words Raju's boyhood and schooling in The Guide by R. K Narayan.

5. Give a brief description of the relationship between Estha and Rahel in The God of Small Things by Arundhati Roy.
6. Give a brief character sketch of Velutha in The God of Small Things by Arundhati Roy.

(4x4=16)

Section B

Attempt any one question in about 600 words.

7. What are the common themes in the poems of Nissim Ezekiel.

Or

How do you account for Kamala Das as a confessional poet.

(12x1=12)

Section C

Attempt any one question in about 600 words.

8. Comment on the theme and tone of the novel *The Guide* by R. K Narayan.

Or

What is the significance of the title of the novel *The Guide* by R. K Narayan. (12x1=12)

Section D

Attempt any one question in about 600 words.

9. Comment on the theme treated by Arundhati Roy in her novel *The God of Small Things*.

Or

Bring out the significance of the title of the novel *The God of Small Things* by Arundhati Roy. (12x1=12)

Section E

Attempt any one question in about 600 words.

10. Comment on the treatment of time by Arundhati Roy in her novel *The God of Small Things*.

Or

Give a brief overview of the major trends in Indian Poetry in English. (12x1=12)

Exam Code: 216404
(20)

Paper Code: 4175

Programme: Master of Arts (English)
Semester-IV

Course Title: World Classics in Translation

Course Code: MENL-4215 ✓

Time Allowed: 3 Hours

Max Marks: 64

Section—A

Note: Attempt any four questions out of six in about 150 words, choosing at least one from each novel

1. What are the similarities and differences between the madness of Don Quixote and Cardenio?
2. Discuss the relationship between Don Quixote and Sancho Panza in the novel Don Quixote.
3. Give a brief pen portrait of Raymond Sintes in Albert Camus's The Outsider.
4. What does Meursault realize at the end of the novel?

5. What does Gregor's transformation symbolise in the novel *The Metamorphosis*?
6. What is Gregor's initial reaction to his metamorphosis into an insect in the novel? (4x4=16)

Section—B

Note: Attempt any one question in about 600 words.

7. (a) How does Cervantes use humor in *Don Quixote*? Also illustrate it with some examples.
Or
(b) Why is *Don Quixote* by Miguel de Cervantes considered the first modern novel? (1x12=12)

Section—C

Note: Attempt any one question in about 600 words.

8. (a) How does the stranger appeal to you as an example of absurd hero?
Or

(b) Comment on the opening of the novel *The Outsider* and throw light on Meursault's character.

(1x12=12)

Section—D

Note: Attempt any one question in about 600 words.

9. (a) Describe how Gregor's insect-like body changes from the opening to the ending of the story? And how do these physical changes reflect Gregor's evolving emotional state in *The Metamorphosis*?

Or

(b) Write a note on symbolism in the novel *The Metamorphosis*. Also throw light on what Gregor's death symbolizes.

(1x12=12)

Section—E

Note: Write a note on any three of the following terms.

10. (a) Existentialism

(b) Myth

(c) Absurd

(d) Expressionism

(e) Nihilism

(3x4=12)

Exam Code: 215904
(20)

Paper Code: 4176

Programme: Master of Arts (Fine Arts)
Semester-IV

**Course Title: History of European Art (Early 15th Century
to Mid 19th Century)**

Course Code: MFAL- 4241 ✓

Time Allowed: 3 Hours

Max Marks: 80

Note: Students are required to attempt any five questions out of eight. Atleast one question from each section is compulsory and fifth question can be done from any section. Each question carries 16 marks.

Section-A

1. Explain High Renaissance with special reference to Lenoardo. 16
2. Write a detailed note on Resaissance in North.

Section-B

3. Write a detailed note on Mannerism Artist. 16
4. Explain Baroque with special reference to Rembrandt.

Section-C

5. Discuss in detail about Roccoco. 16
6. What do you know about Neo Classicism, explain any one artist.

Section-D

7. Explain Romantiasm with special reference to Turner. 16
8. Give a detailed on Realism, explain any one artist.

Punjabi version

Section-A

1. ਲੈਨੋਆਰਡੋ ਦੇ ਵਿਸ਼ੇਸ਼ ਸੰਦਰਭ ਨਾਲ ਉੱਚ ਪੁਨਰਜਾਗਰਣ ਦੀ ਵਿਆਖਿਆ ਕਰੋ।
2. ਉੱਤਰ ਵਿੱਚ ਪੁਨਰਜਾਗਰਣ ਬਾਰੇ ਇੱਕ ਵਿਸਤ੍ਰਿਤ ਨੋਟ ਲਿਖੋ।

16

Section-B

3. ਮੈਨੇਰਿਜ਼ਮ ਕਲਾਕਾਰ 'ਤੇ ਵਿਸਤ੍ਰਿਤ ਨੋਟ ਲਿਖੋ।
4. ਰੇਮਬ੍ਰਾਂਡਟ ਦੇ ਵਿਸ਼ੇਸ਼ ਸੰਦਰਭ ਨਾਲ ਬਾਰੋਕ ਦੀ ਵਿਆਖਿਆ ਕਰੋ

116

Section-C

5. ਰੋਕੋਕੋ ਬਾਰੇ ਵਿਸਥਾਰ ਵਿੱਚ ਚਰਚਾ ਕਰੋ।
6. ਤੁਸੀਂ ਨਿਓਕਲਾਸਿਸਿਜ਼ਮ ਬਾਰੇ ਕੀ ਜਾਣਦੇ ਹੋ, ਕਿਸੇ ਇੱਕ ਕਲਾਕਾਰ ਨੂੰ ਸਮਝਾਓ।

16

Section-D

7. ਟਰਨਰ ਦੇ ਵਿਸ਼ੇਸ਼ ਹਵਾਲੇ ਨਾਲ ਰੋਮਾਂਸਵਾਦ ਦੀ ਵਿਆਖਿਆ ਕਰੋ।
8. ਯਥਾਰਥਵਾਦ ਬਾਰੇ ਵਿਸਥਾਰਪੂਰਵਕ ਜਾਣਕਾਰੀ ਦਿਓ, ਕਿਸੇ ਇੱਕ ਕਲਾਕਾਰ ਦੀ ਵਿਆਖਿਆ ਕਰੋ।

16

(16×5=80)

Exam Code: 215904
(20)

Paper Code: 4177

Programme: Master of Arts (Fine Arts)
Semester-IV

Course Title: Modern Movements in Art in Europe, U.S.A.
and India (Early 20th Century to Contemporary Art)

Course Code: MFAL - 4242 ✓

Time Allowed: 3 Hours

Max Marks: 80

Attempt five question out of Eight. Each question carries equal Marks (16). One question from each section is compulsory. Fifth question can be attempt from any section.

Section-A

1. Write a detailed note on Dadaism.
2. Discuss Surrealism with special reference to Salvador Dali.

Section-B

3. Explain Piet Mondrian.
4. Discuss about Abstract Expressionism with special reference to Jackson Pollock.

Section-C

5. Give a detailed note on Andy Warhol.
6. Write an essay on Op Art.

Section-D

7. Write a note on Rabindranath's art.
8. Give a detailed note on Cholmandala group.

Punjabi versions

Section-A

1. ਦਾਦਾਵਾਦ ਬਾਰੇ ਵਿਸਤ੍ਰਿਤ ਨੋਟ ਲਿਖੋ।
2. ਸਲਵਾਡੋਰ ਡਾਲੀ ਦੇ ਵਿਸ਼ੇਸ਼ ਸੰਦਰਭ ਨਾਲ ਅਤਿ ਯਥਾਰਥਵਾਦ ਦੀ ਚਰਚਾ ਕਰੋ।

Section-B

3. ਪੀਟ ਮੋਂਡਰਿਅਨ ਦੀ ਵਿਆਖਿਆ ਕਰੋ।
4. ਜੈਕਸਨ ਪੋਲੈਕ ਦੇ ਵਿਸ਼ੇਸ਼ ਸੰਦਰਭ ਦੇ ਨਾਲ ਐਬਸਟਰੈਕਟ ਐਕਸਪ੍ਰੈਸ਼ਨਿਜ਼ਮ ਬਾਰੇ ਚਰਚਾ ਕਰੋ।

Section-C

5. ਐਂਡੀ ਵਾਰਹੋਲ 'ਤੇ ਵਿਸਤ੍ਰਿਤ ਨੋਟ ਦਿਓ।
6. ਓਪ ਆਰਟ 'ਤੇ ਇੱਕ ਲੇਖ ਲਿਖੋ।

Section-D

7. ਰਬਿੰਦਰਨਾਥ ਦੀ ਕਲਾ 'ਤੇ ਇੱਕ ਨੋਟ ਲਿਖੋ।
8. ਚੋਲਮੰਡਲਾ ਸਮੂਹ ਬਾਰੇ ਵਿਸਤ੍ਰਿਤ ਨੋਟ ਦਿਓ।

Exam Code: 217504
(30)

Paper Code: 4279

**Programme: Master of science (Fashion Designing &
Merchandising) Semester-IV**

Course Title: Fashion Merchandising and Retailing

Course Code: MFDL-4231 ✓

Time Allowed: 3 Hours

Max Marks: 80

Note: Attempt five questions, selecting at least one question from each section. Attempt fifth question from any section. Each question carries equal 16 marks.

Section-A

1. What do you mean by buying and selling? Explain the role and responsibilities of Retail Fashion Buyer.
2. What are the different store operations? How is Store Retailing different from Non-store Retailing?

Section B

3. What is the difference between Retail Advertising and Visual Merchandising?
4. Define the following:
 - a) Planning and Direction
 - b) Personal Selling

Section C

5. Explain the working and management of a Retail Store Chain taking an example of any National brand.
6. Write short notes on:
 - a) Discounts
 - b) Payment Terms
 - c) Cost Price
 - d) Backward Cost

Section D

7. What are Departmental Stores? Explain its work flow
8. Write short notes on:
 - a) Multiple Line Stores
 - b) Discounters

Exam Code: 217504
(30)

Paper Code: 4280

**Programme: Master of science (Fashion Designing &
Merchandising) Semester-IV**

Course Title: Communication Skills in English

Course Code: MFDM-4232

Time Allowed: 3 Hours

Max Marks: 40

**There are four sections. namely A B, C and D. Attempt one
question from each section.**

Section-A

1. Explain in detail importance and application of video conferencing in business management and marketing
2. Write a detailed note on Video Communication.

10

Section-B

3. Explain the important components of Report Writing.
4. Write a report on a fashion designing and merchandising workshop organized by your college.

10

Section C

5. Frame an advertisement for the promotions of dresses designed by Karishma Boutique.

 6. Explain the following terms:
 - (i) Art Deco prim
 - (ii) Private label brand
 - (iii) Merchandise
 - (iv) Art Nouveau
 - (v) Rag Trade
- 10

Section D

7. You are Reena of 34, Green Avenue, Amritsar. Draft a resume for the post of receptionist. You may imagine the necessary details.

 8. You are Deepali of 44 Model Town, Jalandhar. You have seen an advertisement in The Indian Express for the post of a Fashion Designer. Draft a job application for the post of Fashion Designer.
- 10

Exam Code: 216304
(20)

Paper Code: 4161

Programme: Master of Arts (Hindi)
Semester-IV

Course Title: Adhunik Hindi Kavya: Chhayavadottar Kaal

Course Code: MHIL-4261 ✓

Time Allowed: 3 Hours

Max Marks: 64

नोट: यह प्रश्न पत्र पांच इकाईयों में विभाजित है। प्रथम इकाई अनिवार्य है, इस भाग में पूछे गये छः प्रश्नों में से विद्यार्थी के लिए किन्हीं चार का उत्तर देना आवश्यक है। प्रत्येक प्रश्न का उत्तर 250 शब्दों/दो पृष्ठों में दें। प्रत्येक प्रश्न के लिए निर्धारित अंक 4 हैं। भाग दो, तीन, चार और पांच में पूछे गये दो-दो प्रश्नों में से विद्यार्थी के लिए एक का उत्तर देना अनिवार्य है। प्रत्येक प्रश्न का उत्तर 1000 शब्दों में दें। प्रत्येक प्रश्न के लिए निर्धारित अंक 12 है।

इकाई—एक

1. माँ है वह! वह है, इसी से हम बने हैं।
किंतु हम हैं द्वीप। हम धारा नहीं हैं।
स्थिर समर्पण है हमारा। हम सदा से द्वीप हैं स्रोतस्विनी के।
किंतु हम बहते नहीं हैं। क्योंकि बहना रेत होना है।
हम बहेंगे तो रहेंगे ही नहीं।

2. सौंप रहा था उसी किरीटी-तरु को
कौन प्रियंवद है कि दंभ कर
इस अभिमन्त्रित कारुवाद्य के सम्मुख आवे?
कौन बजावे
यह वीणा जो स्वयं एक जीवन-भर की साधना रही?
भूल गया था केश-कम्बली राज-सभा को:
3. किस स्पर्धा से हाथ करें आघात
छीनने को तारों से
एक चोट में वह संचित संगीत जिसे रचने में
स्वयं न जाने कितनों के स्पन्दित प्राण रचे गये।
4. मैंने महसूस किया कि मैं वक्त के
एक शर्मनाक दौर से गुजर रहा हूँ
अब ऐसा वक्त आ गया है जब कोई
किसी का झुलसा हुआ चेहरा नहीं देखता है
अब न तो कोई किसी का खाली पेट
देखता है, न थरथराती हुई टांगें
और न ढला हुआ सूर्यहीन कन्धा देखता है
हर आदमी, सिर्फ, अपना धन्धा देखता है

5. इन्कार से भरी हुई एक चीख
और एक समझदार चुप
दोनों का मतलब एक है—
भविष्य गढ़ने में, चुप और चीख
अपनी—अपनी जगह एक ही किस्म से
अपना—अपना फर्ज अदा करते हैं।

6. इसीलिए टालता हूँ उस मेरे प्रिय को
कतराता रहता,
डरता हूँ उससे।
वह बिठा देता है तुंग शिखर के
खतरनाक, खुरदरे कगार—तट पर
शोचनीय स्थिति में ही छोड़ देता मुझको।

इकाई—दो

7. अज्ञेय के काव्य की साहित्यिक विशेषताओं पर विचार करें।
—आसाध्यवीणा कविता के कथ्य को स्पष्ट करें।

इकाई—तीन

8. धूमिल की कविता में जनवादी चेतनना को सोदाहरण समझाएं।
—धूमिल की कविता में आज के व्यक्ति के बिम्ब को रेखंकित करें

इकाई—चार

9. फंतासी के कवि मुक्तिबोध।
अँधेरे में कविता का कथ्य और शिल्प।

इकाई—पाँच

10. धूमिल: व्यक्तित्व और कृतित्व।
अज्ञेय की जीवनदृष्टि पर विचार करें।

Exam Code: 216304
(20)

Paper Code: 4162

Programme: Master of Arts (Hindi)
Semester-IV

Course Title: Adhunik Gadhya Sahitya

Course Code: MHIL-4262 ✓

Time Allowed: 3 Hours

Max Marks: 64

नोट: यह प्रश्न पत्र कुल पांच इकाइयों में विभाजित है। पहली इकाई के 6 गद्यांशों में से किन्हीं चार की सप्रसंग व्याख्या अनिवार्य है। प्रत्येक व्याख्या 250 शब्दों/2 पृष्ठों में हो। प्रत्येक व्याख्या 4 अंक की होगी। शेष चार इकाइयों दो, तीन, चार और पांच में समानुपात से क्रमशः एक-एक प्रश्न का उत्तर देना अनिवार्य है। प्रत्येक प्रश्न का उत्तर लगभग 1000 शब्दों/5 पृष्ठों में हो। सभी प्रश्न 12-12 अंकों के होंगे।

इकाई-एक

1. क. कहते हैं दुनिया बड़ी भुलक्कड़ है। केवल उतना ही याद रखती है, जितने से उसका स्वार्थ सधता है। बाकी को फेंककर आगे बढ़ जाती है। शायद अशोक से उसका स्वार्थ नहीं सधा। क्यों उसे वह याद रखती? सारा संसार स्वार्थ का अखाड़ा ही तो है।

ख. संयमन का उपदेश हमारे ऋषि मुनि देते आये हैं किन्तु इसेक बुरे नतीजे भी हमारे सामने आए हैं—बड़े—बड़े तपस्वियों की लम्बी—लम्बी तपस्याएं एक रंभा, एक मनेका, एक उर्वशी की मुस्कान पर स्खलित हो गईं।

ग. जिससे उसके मन को कड़ी से कड़ी चोट पहुंच सकूँ। उसे मेरे लंबे बाल अच्छे लगते हैं इसलिए सोचती हूँ, इन्हें जाकर कटा आऊँ। वह मेरे नौकरी करने के हक में नहीं है। इसलिए चाहती हूँ कहीं भी, कोई भी छोटी मोटी नौकरी ढूँढकर कर लूँ। कुछ भी ऐसी बात जिससे एक बार तो वह अंदर से तिलमिला उठे। पर मैं कुछ नहीं कर पाती।

घ. उसकी किसी बड़ी चीज की वजह से। एक को कि वह इंटेलेक्चुअल बहुत बड़ा है। दूसरे को की उसकी तनखाह पांच हजार है। तीसरे को की उसकी तख्ती चीफ कमिश्नर की है। जब भी बुलाया है, आदमी को नहीं—उसकी तनखाह को, उसके रुत्बे को बुलाया है।

च. इन्हीं भाइयों ने मुझसे आर्नल्ड का बुध चरित लाइट ऑफ एशिया पढ़ने की सिफारिश की। अब तक तो मुझे एडवर्ड आर्नल्ड के गीता का अनुवाद ही मुझे पता था। बुध चरित को मैंने गीता से भी अधिक चाव से पढ़ा। पुस्तक हाथ में लेने के बाद पूरी करके ही रख सका।

छ. शराब से मुझे कोई मतलब नहीं था। चार आदमियों के बीच शराब की दो बोतलें मिला करती थीं। इसलिए अनेक चौकड़ियाँ मुझे अपने साथ खाने को बुलातीं। मेरे न पीने से उनको जो दो बोतलें उड़ाने को मिल जातीं। इसेक सिवा इस सत्रों में एक महारात्रि ग्रैंड नाईट होती है। उस दिन पोर्ट शेरी के अलावा शैम्पेन शराब भी मिलती है। शैम्पेन की लज्जत कुछ और ही मानी जी है। इसलिए इस बड़ी रात को मेरी कीमत बढ़ जाती थी और उस रात की उपस्थिति के लिए मुझे न्यौता भी मिलता था।

4x4=16

इकाई—दो

2. निबंध का स्वरूप और उसकी विशेषताएं लिखें।
3. कवियों की उर्मिला विषयक उदासीनता में उपेक्षित पात्रों का सरोकार लिए हुए है। इस कथन की तर्कसंगत व्याख्या करें।

12

इकाई—तीन

4. हिंदी नाटक की विकास यात्रा का सोदाहरण परिचय दें।
5. मोहन रोकश के आधे अधूरे नाटक पारिवारिक जीवन की त्रासदी है, स्पष्ट करें।

12

इकाई—चार

6. आत्मकथा का अभिप्राय, तत्व एवं प्रकारों का परिचय दें।
7. मेरी आत्मथा के आधार पर गांधी जी का व्यक्तित्व विश्लेषण करें।

12

इकाई-पांच

8. मेरे राम का मुकुट भीग रहा है का प्रतिपाद्य लिखें।
9. आधे अधूरे की नाट्य भाषा का विस्तृत परिचय दें। 12

Exam Code: 216304
(20)

Paper Code: 4163

Programme: Master of Arts (Hindi)
Semester-IV

Course Title: Hindi Bhasha Aur Devnagari Lipi

Course Code: MHIL-4263 ✓

Time Allowed: 3 Hours

Max Marks: 64

नोट: यह प्रश्न पत्र पाँच भागों में विभाजित है। पहला भाग अनिवार्य है। शेष भागों कमशः दो, तीन, चार और पाँच में से एक-एक करना अनिवार्य है। कुल पांच प्रश्नों का उत्तर दें।

भाग-एक

1. नोट: निम्नलिखित प्रश्नों में से कोई चार प्रश्न करें। सभी प्रश्न 4 अंक के हैं।
क. वैदिक संस्कृत का परिचय दें।
ख. शौरसैनी भाषा का परिचय दें।
ग. उपसर्ग का स्वरूप निर्धारित करें।
घ. समास की परिभाषा दें।
च. वचन का परिचय दें।
छ. प्रत्यय का परिचय दें।

4x4=16

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II - UMR

भाग-दो

2. अपभ्रंश भाषा का विस्तारपूर्वक परिचय दें।
3. प्रकृत भाषा का विस्तारपूर्वक परिचय दें।

भाग-तीन

4. हिंदी भाषा का उदभव बताते हुए उसके विकास का वर्णन करें।
5. सुनीति कुमार चटर्जी का भाषा वर्गीकरण स्पष्ट करें।

भाग-चार

6. उपसर्ग और प्रत्ययों को विस्तारपूर्ण स्पष्ट करें।
7. पश्चमी हिंदी की बोलीओं पर विचार करें।

भाग-पाँच

8. ब्राह्मी और खरोष्ठी लिपि का विस्तारपूर्वक वर्णन करें।
9. देवनागरी लिपि का स्वरूप बताते हुए उसकी विशेषताएं बताएं।

12x4=48

Exam Code: 216304
(20)

Paper Code: 4164

Programme: Master of Arts (Hindi)
Semester-IV

Course Title: Rajbhasha Parshikshan

Course Code: MHIL-4264

Time Allowed: 3 Hours

Max Marks: 64

नोट: निम्नलिखित प्रश्नों में से किन्हीं 4 प्रश्नों का उत्तर दें।
प्रत्येक प्रश्न के लिए निर्धारित 4 अंक हैं। प्रत्येक प्रश्न का
उत्तर दो पृष्ठों/250 शब्दों में दें। प्रत्येक प्रश्न के लिए
निर्धारित अंक 4 हैं।

इकाई—एक

1. क. प्रशासन से क्या अभिप्राय है, परिभाषा सहित उत्तर दें।
ख. राजभाषा की आवश्यकता पर विचार करें।
ग. त्रिभाषा सूत्र के तात्पर्य को स्पष्ट कीजिए।
घ. अच्छे अनुवादक के गुणों पर प्रकाश डालें।
च. टिप्पण के महत्व को स्पष्ट करें।
छ. राष्ट्रभाषा और राज भाषा में क्या अंतर है।

नोट: इकाई दो, तीन, चार और पांच में से एक-एक प्रश्न का उत्तर देना अनिवार्य है। उत्तर पांच पृष्ठों/1000 शब्दों में दें। प्रत्येक प्रश्न के लिए निर्धारित अंक 12 है।

इकाई—दो

2. राजभाषा के सन्दर्भ में संविधान सभा में हुई विचार चर्चा और प्रमुख निर्णयों से संक्षेप में अवगत कराएं।
3. राजभाषा के रूप में हिंदी की चुनौतियों से अवगत कराएं।

इकाई—तीन

4. टिप्पण की परिभाषा दें और अच्छे टिप्पण की विशेषताओं पर प्रकाश डालें।
5. संक्षेपण के आवश्यक तत्वों का परिचय दें।

इकाई—चार

6. अनुवाद का महत्व को स्पष्ट कीजिए।
7. हिंदी भाषा के प्रचार प्रसार में योगदान देने वाली संस्थाओं के योगदान के विषय में विस्तारपूर्वक लिखें।

इकाई—पांच

8. बैंकों में राजभाषा हिंदी के कार्यान्वयन की स्थिति पर विचार करें।
9. भूमंडलीकरण ने हिंदी के प्रचार-प्रसार को गति दी है, क्या आप इस कथन से सहमत हैं।

Exam Code: 216304
(20)

Paper Code: 4165

Programme: Master of Arts (Hindi)
Semester-IV

**Course Title: Utarkavyadhara ke Sandarbh mein Guru
Tegh Bahadur Ji ki baani ka Vishesh Adhyayan**

Course Code: MHIL-4265 (Opt-I) ✓

Time Allowed: 3 Hours

Max Marks: 64

नोट: यह प्रश्न पत्र कुल पांच इकाइयों में विभाजित है। पहली इकाई के 6 गद्यांशों में से किन्हीं चार की सप्रसंग व्याख्या अनिवार्य है। प्रत्येक व्याख्या 250 शब्दों/2 पृष्ठों में हो। प्रत्येक व्याख्या 4 अंक की होगी। शेष चार इकाइयों दो, तीन, चार और पांच में समानुपात से क्रमशः एक-एक प्रश्न का उत्तर देना अनिवार्य है। प्रत्येक प्रश्न का उत्तर लगभग 1000 शब्दों/5 पृष्ठों में हो। सभी प्रश्न 12-12 अंकों के होंगे।

इकाई-एक

1. निम्नांकित में से किन्हीं 4 की सप्रसंग व्याख्या करें
क. गरबु करतु है देह को बिनसै छिन मै मीति ॥
जिही प्रानी हरि जस कहिओ नानक तिहि जगु जीति ॥

ख. जिहि घटि सिमरनु राम को साक नरु मुकता जानु ॥

तिहि नी हरि अंतर नहीं नानक सांचि मानु ॥

ग. नर चाहत कछु अउर अउरै की अउरै भई ॥
चितवत रहिओ ठगउर नानक फांसी गलि परि ॥

घ. जो नरु दुख में दुखु मही मानै ॥
सुख सनेहु अरु भै नहीं जाके कंचन माटी मानै ॥
नह निंदिया नह उसतिति जाकै लोभ मोह अभिमाना ॥
हरख सोग ते रहे निआरउ नाहि मान अपमाना ॥
आसा मनसा सगल तिआगे जग ते रहै निरासा ॥
कामु क्रोध जिन्ह परसे नाहिन तिहु घट ब्रहमु निवासा ॥
गुरु किरपा जिह नर करु कीनी तिहि इह तुगति पछानी ॥
नानक लीन भइयो गोबिंद सिउ जिओ पानी संग पानी ॥

च. काहे रे बन खोजन जाई ॥
सराब निवासी सदा अलेपी तोही संग समाई ॥
पुहुप मधि जिउ बासु बसतु है मुकुर माहि जैसे छाई ॥
तैसे ही हरि बसै निरंतरि घट ही खोजहु भाई ॥
बाहरि भीतरी एकहु जानहु इहु गुर गिआनु बताई ॥
जनु नानक बिन आपा चीनै मिटे न भ्रम की काई ॥

छ. मन रे साचा गहो बिचारा ॥
राम नाम बिन मिथिया मानो सगरु इहु संसारा ॥
जा कउ जोगी खोजत हारो पाई नाही तिह पारा ॥
सो सुआमी तुम निकटि पछानो रूप रेख ते निआरा ॥
पावन नाम जगत मै हरि कौ कबहु नाहिँ सँभारा ॥
नानक सरनि परिओ जगबन्दन राखहु बिरद तुम्हारा ॥

4x4=16

इकाई—दो

2. गुरु तेग बहादुर की परंपरा और विकास का वर्णन कीजिये।
3. गुरु तेग बहादुर जी के व्यक्तित्व का परिचय देते हुए उनके कृतित्व पर प्रकाश डालें। 12

इकाई—तीन

4. गुरु तेग बहादुर जी की वाणी में गुरुमत संकल्प अनेक स्थलों पर चित्रित हुआ है, स्पष्ट करें।
5. गुरु तेग बहादुर जी की वाणी का सांस्कृतिक पक्ष पर प्रकाश डालें। 12

इकाई—चार

6. गुरु तेग बहादुर जी की वाणी में कौन-कौन से रागों का प्रयोग हुआ है। सोदहारण विवेचन करें।
7. गुरु तेग बहादुर जी की वाणी में प्रगातिशाली के दर्शन होते हैं, स्पष्ट करें।

12

इकाई—पांच

8. गुरु तेग बहादुर जी की वाणी के समाजशास्त्रीय आयाम लिखें।
9. गुरु तेग बहादुर जी की वाणी का काव्य दर्शन का विस्तृत विवेचन करें।

12

Exam Code: 217904

Paper Code: 4273

**Programme: Master of Science (Information and Network
Security) SEMESTER - IV**

Course Title: Intrusion Detection System

Course Code: MINL-4111 ✓

Time Allowed: 3 Hours

Max. Marks: 80

Note: Attempt five questions in all, selecting atleast one question from each section. The fifth question may be attempted from any section. Each question carries equal marks.

(Section A)

Q1) Explain scope, purpose, need and application of Intrusion Detection System in detail. (16)

Q2) What are various network threats? How intrusion detection system helps in mitigating these threats? (16)

(Section B)

Q3) a) What are various preventive measure utilized in Intrusion Detection? Explain in detail.

b) How Intrusion Detection System are deployed in the network? (2 X 8 = 16)

Q4) Explain various Intrusion detection technologies in detail. (16)

(Section C)

Q5) a) What are various preventive measure utilized in Intrusion Detection? Explain in detail.

b) How Intrusion Detection System are deployed in the network? (2 X 8 = 16)

Q6) Explain the following concepts for IDS:

(a) Information Gathering Capabilities

(b) Security Capabilities. (2 X 8 = 16)

(Section D)

Q7) a) How Multiple IDS are integrated?

b) Explain various technologies having capabilities of IDS. (2 X 8 = 16)

Q8) a) Differentiate between direct and indirect IDS integration.

b) Explain Network Forensic Analysis. (2 X 8 = 16)

Exam Code: 217904

Paper Code: 4274

Master of Science (Information and Network Security) Semester – IV

Course Code: MINL-4112

Reverse Engineering and Malware

Time Allowed: 3 Hrs.

Max. Marks: 80

NOTE: Candidates are required to attempt five questions. Select at least one question from each section. The fifth question may be attempted from any section. Each question carries equal marks.

SECTION-A

- Q1. What are Malware Threats? How to detect using indicators that the malware may be running on your network? (16)
- Q2. How to inspect ClamAV Signatures? Also explain how to create custom ClamAV Database? (16)

SECTION-B

- Q3. What is reverse engineering a method for analyzing malicious code behavior? Also explain malware analysis methodology? (16)
- Q4. Discuss in detail Code analysis. How it is different from Behavioral analysis? (16)

SECTION-C

- Q5. Explain following terms -
a) Initial Infection Vectors
b) Sandboxing Executables (2X8)
- Q6. a) How to identify Executable Metadata?
b) Discuss Executable Packers and Compression. (2X8)

SECTION-D

- Q7. How to analyze Malicious Microsoft Office and Adobe PDF Documents? (16)
- Q8. Using Reverse Engineering Process how to improve the legacy software? (16)

Exam Code: 217904

Paper Code: 4275

Master of Science (Information and Network Security) Semester - IV

Course Title: Ethical Hacking

Course Code: MINL-4113

Time Allowed: 3 hrs

Max. Marks: 80

Note: Attempt five questions in all, selecting at least one question from each section. The fifth question be attempted from any section. Each question carries 16 marks.

Section – A

- Q.1 What are the different types of hacking. Demonstrate diagrammatically all the phases of hacking?
- Q.2 What are the different types of threats can be possible on banking application and how we can control those attacks?

Section – B

- Q.3 Describe System hacking. explain different password cracking tools?
- Q.4 Elaborate the comparative analysis between Active and Passive sniffing along with DNS and IP sniffing?

Section – C

- Q.5 Elaborate Session hijacking in detail. Explain phases of session hijacking in the form of flowchart?
- Q.6 Explain tools and types of session hijacking in detail.

Section – D

- Q.7 What are different hacking tools for securing wireless network?
- Q.8 Explain about hacking wireless network and elaborate in detail about IEEE 802.11a standard?

Exam Code: 217904

Paper Code: 4276

Master of Science (Information and Network Security) (Semester- IV)

Course Title: Blockchain for Enterprise Applications

Course Code: MINL-4114

Time Allowed - 3 Hours

Maximum Marks: 80

Note- Attempt five Questions in all selecting at least one question from each section. Fifth question can be attempted from any section. Each Question carries equal (16) marks.

Section-A

Q.1 Explain the elements of Block chain? Elaborate its features?

Q.2 What is decentralization. Explain its platform and different applications in detail?

Section-B

Q.3 Elaborate the concept of bitcoin network wallets and payments. With real life scenario based example?

Q.4 Explain the concept of digital key and address?

Section-C

Q.5 Explain the terminologies Primecoin and Zcash?

Q.6 Explain the process of development of altcoins?

Section-D

Q.7 Is it possible to develop Ethereum? If yes then explain its complete process?

Q.8 Compare and contrast Kadena and Ripple Blockchain methods?

Exam Code: 217804
(20)

Paper Code: 4152

Programme: Master of Arts (Journalism & Mass Communication)
Semester-IV

Course Title: International Communication

Course Code: MJML-4311 ✓

Time Allowed: 3 Hours

Max Marks: 60

Note: Attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section. Each question carries 12 marks.

Section-A

1. Define International Communication in detail while highlighting its scope and Characteristics.
2. What do you know about New World Information Order?

Section-B

3. Explain Communication as a Human Right.
4. Throw light upon any two international news agencies

Section-C

5. Discuss the concept of Information Super Highway and its impact on Society
6. Explain the efforts of UNESCO in removal of News Flow Imbalance.

Section-D

7. Which are the various issues in International Communication? Explain in detail
8. Define the term Globalisation and explain its effects on a country like India.

Master of Arts (Journalism and Mass Communication) Semester: IV

Course Title: Human Rights

Course Code: MJML-4312

Time Allowed: 3 Hours

Max Marks: 60

Note: Attempt five questions in all, selecting at least one question from each section. The fifth question can be attempted from any Section. Each question carries equal (12) marks.

Section-A

1. What do you mean by Human Rights?
2. Discuss Universal Declaration of Human Rights.

Section-B

3. Explain role of Human Rights to find solutions regarding Environmental issues.
4. Discuss how Human Rights are playing pivotal role in Indian Society.

Section-C

5. write a note on Human Rights of an accused person.
6. Comment upon the Human rights for Children and women.

Section-D

7. What do you understand by National Human Rights Commission?
8. Explain Human Rights and Right to Freedom of Speech and Expression.

Exam Code: 217804

Paper Code: 4154

**Programme: Master of Arts (Journalism & Mass
Communication) Semester: IV**

Course Title: Intercultural communication

Course Code: MJML-4313 ✓

Time Allowed: 3 Hours

Max Marks: 60

Attempt five questions in all, selecting at least one question from each section. The fifth question may be attempted from any Section. Each question carries 12 marks.

SECTION-A

- Q1 Define Culture. Discuss the concept and characteristics of culture.
Q2 Write an essay on "Culture as a Social Institution".

SECTION-B

- Q3 Write a note on Global Culture.
Q4. What are the principal values that represent the Indian ethical system.

SECTION-C

- Q5 Write a note on "Mass Media as culture manufacturing industry"
Q6. Discuss the impact of new technology on culture.

SECTION-D

- Q7. What are the basic characteristics of Punjabi culture?
Q8. Discuss the role of music and dance in the inter-cultural communication.

Exam Code: 217804

Paper Code: 4155

**Programme: Master of Arts (Journalism & Mass
Communication) Semester: IV**

Course Title: Film Studies

Course Code: MJMM-4314 ✓

Time Allowed: 3 Hours

Max Marks: 60

Attempt five questions in all, selecting at least one question from each section. The fifth question may be attempted from any Section. Each question carries 12 marks.

SECTION-A

- Q1. Elaborate the nature and characteristics of regional cinema.
- Q2 Describe the historical beginning of Indian cinema.

SECTION-B

- Q3. What are the qualities of successful screen writer?
- Q4. Discuss the role of Indian cinema in highlighting the social issues.

SECTION-C

- Q5. Justify ideological approach in film studies.
- Q6. Write a film review of a film you saw recently.

SECTION-D

- Q7. Trace the history of Punjabi cinema.
- Q8. Briefly describe the different types of film genres.

Exam Code: 211004
(20)

Paper Code: 4220

Programme: Master of Science (Mathematics)
Semester-IV

Course Title: Functional Analysis-II

Course Code: MMSL-4331 ✓

Time Allowed: 3 Hours

Max Marks: 80

Attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section. Each question carries 16 marks.

Section-A

1. (a) A sequence $\{x_n\}$ in a normed space N converges weakly to $x \in N$ iff

(i) the sequence $\{\|x_n\|\}$ is bounded and

(ii) $\lim_{n \rightarrow \infty} f(x_n) = f(x) \forall f \in M$, where M is total in N^* . (10)

(b) If T is an arbitrary operator on a Hilbert space H then

$T = 0$ iff $\langle T(x), x \rangle = 0 \forall x \in H$ (06)

2. (a) Prove that if T is a unitary operator on a Hilbert space H then T is isometric isomorphism of H into H . Is the converse true? Justify. (10)
- (b) Prove or disprove product of two normal operators is a normal operator. (06)

Section-B

3. (a) Let P and Q be projections on a Hilbert space H . Then $P+Q$ is a projection iff $PQ=0$ (08)
- (b) A linear operator T on a finite dimensional complex normed space $X \neq \{0\}$ has at least one eigen value. In this case what is the relation between number of eigen values of T and dimension of X . (08)
4. (a) Let T be a positive operator on a Hilbert space H . Show that there exist a unique positive operator A on H such that $A^2 = T$. (07)
- (b) Find the spectrum of the operator T on a Hilbert space H defined as $T(e_1) = e_2$ and $T(e_2) = -e_1$ where $B = \{e_1, e_2\}$ is the basis of H and assume that the determinant of a 2×2 matrix $[a_{ij}]$ is given by $a_{11} a_{22} - a_{12} a_{21}$. (05)

(c) If T is a non-singular operator on a Hilbert space H then λ is an eigen value of T iff λ^{-1} is an eigen value of T^{-1}
(04)

Section-C

5. (a) Give an example to show that if a sequence $\langle T_n \rangle$ of compact operators converges pointwise to T then T need not be compact operator. (06)
- (b) Let X and Y be normed spaces and $T: X \rightarrow Y$ a compact linear operator. Suppose sequence $\langle x_n \rangle$ in X is weakly convergent, $x_n \xrightarrow{\omega} x \in X$. Then $\langle T(x_n) \rangle$ is strongly convergent in Y and has the limit $y = T(x)$. (10)
6. (a)) Let $T: N \rightarrow N$ be a compact linear operator, when N is a normed space, show that set of eigen values of T is countable. (10)
- (b) Let $T: N \rightarrow N$ be a compact linear operator and $S: N \rightarrow N$ a bounded linear operator on a normed space N . Then show that TS and ST are compact operators. (06)

Section-D

7. (a) Show that set of all linear operators on a vector space in to itself forms an algebra. (08)
- (b) Let G be group of all invertible elements of a complex Banach Algebra A . Show that the mapping $\phi: G \rightarrow G$ defined as $\phi(x) = x^{-1}$ is a homeomorphism. (08)
8. (a) If every elements $x \neq 0$ of an algebra A has a left inverse, show that A is division algebra. (08)
- (b) Let A be complex division algebra. Then A is isomorphic to set of complex numbers. (08)

Exam Code: 211004
(20)

Paper Code: 4221

Programme: Master of Science (Mathematics)
Semester-IV

Course Title: Topology-II

Course Code: MMSL-4332 ✓

Time Allowed: 3 Hours

Max Marks: 80

Attempt five questions, selecting at least one question from each section and the fifth question may be attempted from any section. Each question carries 16 marks.

Section-A

1. (a) Every metric space is T_2 -space and T_3 -space. 8
(b) Every metric space is completely normal and hence T_5 -space. 8
2. A topological space (X,T) is complete normal iff every subspace of it is normal. 16

Section-B

3. (a) Show that a subset A of a subspace Y of a topological space X is T_Y -compact iff A is T -compact. 10
(b) Define Cantor set and show that it is compact. 6

4. (a) A topological space (X,T) is compact iff every collection of closed subsets of X with the finite intersection property is fixed i.e. has no non empty intersection. 10
(b) Every sequentially compact topological space has Bolzano Weierstrass property. 6

Section-C

5. (a) State and prove Embedding Theorem. 10
(b) Every Tychonoff Cube is normal, but need not always \exists be completely normal, Prove it. 6
6. State and prove Urysohn's Metrization theorem. 16

Section-D

7. (a) Let (X,T) be a topological space and $Y \subset X$. If x_0 is a point of X , then x_0 is a limit point of Y iff \exists a net in $Y - \{x_0\}$ which converges to x_0 . 8
(b) A topological space (X,T) is compact iff each net in X has a cluster point. 8
8. (a) A filter f in a non empty set X is an Ultra filter on X iff f contains all those subsets of X which intersect every member of f . 8
(b) A topological space (X,T) is a Hausdorff space iff every convergent filter on X has a Unique limit. 8

Exam Code: 211004
(20)

Paper Code: 4222

Programme: Master of Science (Mathematics)
Semester-IV

Course Title: Number Theory

Course Code: MMSL-4333 (Opt-VII)

Time Allowed: 3 Hours

Max Marks: 80

Note: There are eight questions in this paper. Each question carries equal marks (16 marks each). Students have to attempt five question, selecting at least one question from each section. The fifth question may be attempted from any section. Marks are given in the bracket.

Unit-I

1. (a) Find the least positive integer which when divided by 5,6,7 leaves positive integers 3, 1 4 respectively. (8)
- (b) Given a prime number p , prove that $(p-1)! \equiv (p-1)(\text{mod } 1+2+3+ \dots +(p-1))$. (8)

2. (a) Show that if $F_n = 2^{2^n} + 1, n > 1$ is a prime, then 2 is not Primitive root of F_n . (8)
- (b) If the integer 'a' has order K modulo n, then $a^i \equiv a^j \pmod{n}$ if and only if $i \equiv j \pmod{k}$. (8)

Unit-II

3. (a) Evaluate Jacobi symbol $\left(\frac{22}{105}\right)$. (5)
- (b) Is the congruence $x^2 \equiv 5 \pmod{227}$ solveble? (5)
- (c) Prove that 3 is a quadratic residue of 13, but has a quadratic non- residue of 7. (6)
4. (a) State and prove Gauss lemma. (8)
- (b) Show that 20 is quadratic residue of 31. (4)
- (c) If both primes p and q are of the form $4k + 3$, then $\left(\frac{p}{q}\right) = \left(\frac{q}{p}\right)$. (4)

Unit-III

5. (a) Prove that $\phi(n) = n \sum_{d|n} \frac{\mu(d)}{d}$. (8)

(b) Prove that the expression of a prime number as the sum of the squares is unique. (8)

6. (a) if $f(n) = n^2 + 2$ and $n = 6$, then show that

$$\sum_{d|6} f(d) = \sum_{d|6} f\left(\frac{6}{d}\right). \quad (8)$$

(b) The radius of the inscribed circle of a Pythagorean triangle is always an integer. (8)

Unit-IV

7. (a) Expand $\frac{1}{\sqrt{3}}$ as an infinite simple continued fraction.

(8)

(b) Find the irrational numbers represented by

$\langle 1, 2, \overline{3}, 1 \rangle$.

(8)

8. (a) Find the simple continued fraction $\sqrt{31}$. (8)

(b) Determine the fundamental solution of the
equation $x^2 - 41y^2 = 1$. (8)

Exam Code: 211004
(20)

Paper Code: 4223

Programme: Master of Science (Mathematics)
Semester-IV

Course Title: Operations Research-II

Course Code: MMSL-4334(Opt-IX)

Time Allowed: 3 Hours

Max Marks: 80

Note: Attempt five questions in all selecting at least one from each section. Fifth question can be attempted from any section. Each question carries sixteen marks. Students can use only Non-Programmable and Non-Storage type Calculator.

Section A

1. (a) What is Queuing System. Briefly explain elements of a queuing system.
(b) Show that for a single service station with Poisson arrival and exponential service time, the probability that exactly n calling units are in the queue system is $P_n = (1 - p)p^n$, $n \geq 0$ where p is the traffic intensity.

[8,8]

2. (a) Show that if an arrival follows Poisson distribution, then the time between successive arrivals follow exponential distribution.
- (b) Patients arrive at a clinic according to a Poisson distribution at the rate of 30 patients per hour. The waiting room does not accommodate more than 14 patients. Examination time per patient is exponential with mean rate 20 per hour.
- i) Find effective arrival rate at the clinic.
- ii) What is the probability that an arriving patient will not wait?
- iii) What is the expected waiting time until a patient is discharged from the clinic? [8,8]

Section-B

3. (a) A supermarket has two girls ringing up sales at the counters. If the service time for each customer is exponential with mean 4 minutes and if people arrive in a Poisson fashion at the rate of 10 per hour.

- i) Find the probability that an arriving customer has to wait for service.
- ii) What is the expected percentage of idle time for each girl?
- (b) Explain power supply model and obtain its steady state solution. [8,8]
4. (a) Derive economic lot size formula for an inventory model with infinite production rate and shortages not permitted.
- (b) Find the optimal order quantity for a product for which the price breaks are as follows:

Quantity	Unit Cost (Rs)
$0 \leq Q_1 < 100$	20
$100 \leq Q_2 < 200$	18
$200 \leq Q_3$	16

The monthly demand for the product is 400 units, the cost of storage is 20% of the unit cost and ordering cost is Rs. 25.00 per month. [10,6]

Section-C

5. Develop a model for the replacement of equipment whose maintenance costs are incurred in the beginning of the different time periods and value of money changes with time. [16]
6. A computer contains 10,000 resistors. When any resistor fails, it is replaced. The cost of replacing a resistor individually is Re. 1. If all the resistors are replaced at the same time, the cost per resistor would be reduced to 35 paise. The percent surviving say $S(t)$ at the end of month t and $P(t)$ the probability of failure during the month t , are:

T	0	1	2	3	4	5	6
S(t)	100	97	90	70	30	15	0
P(t)	-	0.03	0.07	0.20	0.40	0.15	0.15

What is the Optimum Replacement Plan? 16

Section-D

7. A company manufactures around 200 mopeds. Depending upon the availability of raw materials and

other conditions. the daily production has been varying from 196 mopeds to 204 mopeds whose probability distribution is as follows:

Production per day	196	197	198	199	200	201	202	203	204
Probability	0.05	0.09	0.12	0.14	0.20	0.15	0.11	0.08	0.06

The finished mopeds are transported in a specially designed lorry that can accommodate only 200 mopeds.

Using the random numbers: 82, 89, 78, 24, 53, 61, 18 45, 04, 23,50,77,27,54,10, simulate the process to find:

i) What will be the average number of mopeds waiting in the factory?

ii) What will be the number of empty spaces in the lorry? [16]

8. (a) Philips India is engaged in manufacturing different types of equipment for various consumers The company has two assembly lines to produce its product. The processing time for each of the assembly lines is regarded as a random variable and is described by the following distribution:

Processing time (min.)	Assembly X	Assembly Y
40	0.10	0.20
42	0.15	0.40
44	0.40	0.20
46	0.10	0.15
48	0.25	0.15

Use the following random numbers to generate data on processing times for 10 units of the product and compute the expected processing time For the product: 4236, 7573, 4943, 1283, 2014, 3604, 9344, 5316, 7606, 0089

Read the numbers horizontally, taking the first two digits for the processing time on assembly X and the last two digits for processing time on assembly Y.

(b) Explain the application of simulation to the problems of queuing with an illustration. [8,8]

Code: 211004
(20)

Paper Code: 4224

Programme: Master of Science (Mathematics)
Semester-IV

Course Title: Statistics-II ✓
Course Code: MMSM-4335 (Opt-VIII)

Time Allowed: 3 Hours

Max Marks: 60

Attempt five questions in all selecting one question from each section. Fifth question can be omitted from any section. Each question carries equal (12) marks. Student are allowed to use Statistical Tables and a simple non programmable and non storage calculator.

Section -A

Explain in detail method of sampling with the help of an example. Also define standard error and its utility
12

a) Derive the relation between t, F and Chi-square distribution.

b) Let $x_1, x_2, x_3, \dots, x_n$ be a random sample with common p.d.f

$$f(x) = \begin{cases} 1, & 0 < x < 1 \\ 0, & \text{otherwise} \end{cases}$$

Find the p.d.f, mean and variance of $x_{(1)}$
6 × 2

Section -B

a) Explain the methods of moments of point estimation with an example

b) Obtain M.L.E. of θ in $f(x, \theta) = (1 + \theta)x^\theta, 0 < x < 1$ based on an independent sample of n . Examine whether this estimate is sufficient for θ
6 × 2

(a) If $x_1, x_2, x_3, \dots, x_n$ is a random sample from a distribution having probability density function $f(x, \theta) = \begin{cases} \theta x^{\theta-1}, & \theta < x \leq 1 \\ 0, & \text{elsewhere} \end{cases}$

Find a Best critical region for testing $H_0: \theta = 1$ against $H_1: \theta = 2$

Let p be the proportion of smokers in a certain city. It is proposed to test the hypothesis $H_0: p = 1/2$ against $p = 3/4$. If we reject H_0 when 60 persons or more are found to be smokers in a sample of 100 persons, compute the level of significance and the power of the test. 6 × 2

Section C

(a) In one sample of 8 observations, the sum of the squares of deviations of the sample from the sample mean was 84.4 and in the other sample of 10 observations it was

2.6. Test whether this difference is significant at 5% level, given that critical point for 9) d.f. is 3.29.

Explain F-test as a test of equality of two population Variances 6× 2

6 (a) In an experiment on pea -breeding Mendel obtained the following frequencies of seeds ; 315 round and yellow , 101 wrinkled and yellow, 108 round and green and 32 wrinkled and green . According to his theory of heredity the numbers should be in the ratio 9:3:3:1. Is there any evidence to doubt his theory at 5% level of significance

7) Find likelihood ratio test for the mean of a normal distribution 6× 2

Section D

7 The following data provides the yield of wheat on 12 plots divided into three classes on the basis of three varieties of fertilizers

X1	X2	X3
	3	3
	5	3
	7	5
	6	2

Are there any significant difference between average yields of wheat under three varieties of fertilizers x_1 , x_2 , x_3 12

3 a) What is the meaning and Definition of ANOVA. Explain with stating its assumptions

b) What is the Basic Principle and Application of ANOVA 6× 2

Exam Code: 214904
(20)

Paper Code: 4178

Programme: Master of Arts (Music Vocal)
Semester-IV

Course Title: Gurmat Sangeet

Course Code: MMVL-4361 ✓

Time Allowed: 3 Hours

Max Marks: 60

Note: Attempt five questions in all selecting at least one question from each section. Fifth question can be attempted from any section. Each question carries 12 marks.

Section-A

1. Write a brief note on 'Musicology of Shri Guru Granth Sahib Ji'. 12
2. Describe the place of Classical & Folk Singing Styles used in Shri Guru Granth Sahib Ji'. 12

Section-B

3. Write a note on Contribution of Shri Guru Gobind Singh Ji towards Music. 12
4. Write an essay on Raag Mala in the context of shri Guru Granth Sahib Ji'. 12

Section-C

5. Write the Biography and contribution of Bhai Mardana ji towards Gurmat Sangeet. 12
6. Write a note on Importance of String Instruments used for the accompany of Gurubani Sangeet .12

Section-D

7. How do you classify the ragas mentioned in Shri Guru Granth Sahib Ji'? Describe in Detail. 12
8. Write in detail the various Keertan trends of Gurmat Sangeet. 12

ਨੋਟ: ਹਰੇਕ ਭਾਗ ਵਿੱਚੋਂ ਘੱਟੋ-ਘੱਟ ਇੱਕ ਪ੍ਰਸ਼ਨ ਚੁਣ ਕੇ ਕੁੱਲ ਪੰਜ ਪ੍ਰਸ਼ਨਾਂ ਦੇ ਜਵਾਬ ਦਿਓ। ਪੰਜਵਾਂ ਪ੍ਰਸ਼ਨ ਕਿਸੇ ਵੀ ਸੈਕਸ਼ਨ ਤੋਂ ਲਿਆ ਜਾ ਸਕਦਾ ਹੈ। ਹਰੇਕ ਸਵਾਲ ਦੇ 12 ਅੰਕ ਹਨ।

ਸੈਕਸ਼ਨ-ਏ

1. ਸ੍ਰੀ ਗੁਰੂ ਗ੍ਰੰਥ ਸਾਹਿਬ ਜੀ ਦੇ ਸੰਗੀਤ ਸ਼ਾਸਤਰ 'ਤੇ ਇੱਕ ਨੋਟ ਲਿਖੋ।
(12 ਅੰਕ)
2. ਸ੍ਰੀ ਗੁਰੂ ਗ੍ਰੰਥ ਸਾਹਿਬ ਜੀ ਵਿੱਚ ਵਰਤੀਆਂ ਗਈਆਂ ਸ਼ਾਸਤਰੀ ਅਤੇ ਲੋਕ ਗਾਇਨ ਸ਼ੈਲੀਆਂ ਦਾ ਵਰਤਣ ਕਰੋ।
(12 ਅੰਕ)

ਸੈਕਸ਼ਨ-ਬੀ

3. ਸ੍ਰੀ ਗੁਰੂ ਗੋਬਿੰਦ ਸਿੰਘ ਜੀ ਦੁਆਰਾ ਸੰਗੀਤ ਵਿੱਚ ਦਿੱਤੇ ਯੋਗਦਾਨ ਬਾਰੇ ਇੱਕ ਨੋਟ ਲਿਖੋ।
(12 ਅੰਕ)
4. ਸ੍ਰੀ ਗੁਰੂ ਗ੍ਰੰਥ ਸਾਹਿਬ ਜੀ ਦੇ ਸੰਦਰਭ ਵਿੱਚ ਰਾਗ ਮਾਲਾ ਬਾਰੇ ਇੱਕ ਲੇਖ ਲਿਖੋ।
(12 ਅੰਕ)

ਸੈਕਸ਼ਨ-ਸੀ

5. ਭਾਈ ਮਰਦਾਨਾ ਜੀ ਦੀ ਜੀਵਨੀ ਅਤੇ ਗੁਰਮਤਿ ਸੰਗੀਤ ਵਿੱਚ ਦਿੱਤੇ ਯੋਗਦਾਨ ਦਾ ਵਰਣਨ ਕਰੋ।
(12 ਅੰਕ)
6. ਗੁਰਬਾਣੀ ਸੰਗੀਤ ਦੇ ਵਰਤੋਂ ਵਿੱਚ ਜਾਣ ਵਾਲੇ ਤਾਰ ਸਾਜ਼ਾਂ ਦੀ ਮਹੱਤਤਾ ਬਾਰੇ ਨੋਟ ਲਿਖੋ।
(12 ਅੰਕ)

ਸੈਕਸ਼ਨ-ਡੀ

7. ਤੁਸੀਂ ਸ੍ਰੀ ਗੁਰੂ ਗ੍ਰੰਥ ਸਾਹਿਬ ਜੀ ਵਿੱਚ ਦਰਸਾਏ ਰਾਗਾਂ ਨੂੰ ਕਿਵੇਂ ਸ਼੍ਰੇਣੀਬੱਧ ਕਰ ਸਕਦੇ ਹੋ? ਵਿਸਥਾਰ ਵਿੱਚ ਵਰਣਨ ਕਰੋ। (12 ਅੰਕ)
8. ਗੁਰਮਤਿ ਸੰਗੀਤ ਦੀਆਂ ਵੱਖ-ਵੱਖ ਕੀਰਤਨ ਚੋਕੀਆਂ ਬਾਰੇ ਵਿਸਥਾਰ ਨਾਲ ਲਿਖੋ। (12 ਅੰਕ)

Exam Code: 214904

Paper Code: 4179

Programme: Master of Arts (Music Vocal) Semester: IV

Course Title: Essays on Indian Music and Research in Music

Course Code: MMVL-4362 ✓

Time Allowed: 3 Hours

Max Marks: 60

Attempt five questions in all, selecting at least one question from each section. The fifth question may be attempted from any Section. Each question carries 12 marks.

SECTION-A

- Q1. By giving the meaning of Research, mention its scope in Music Research.
Q2 Describe in detail about the priority areas of Research in Music.

SECTION-B

- Q3. What are the basic pre-requirement of selection of a topic for Music Research?
Q4. Describe in detail about the important features of preparing a synopsis for Research in Music.

SECTION-C

- Q5. What do you know about different Gyan Shallies of Sufi Music.
Q6. Write about inter-relationship of music and yoga.

SECTION-D

- Q7. What is the relation of Music and Physics? Describe in details.
Q8. Explain how psychology plays an important role in learning and teaching of music.

Hindi Version

खंड-ए

- Q1 शोध का अर्थ बताते हुए संगीत शोध में इसके क्षेत्र का उल्लेख कीजिए।
Q2 संगीत में अनुसंधान के प्राथमिकता वाले क्षेत्रों के बारे में विस्तार से वर्णन करें।

खंड -बी

- Q3 संगीत अनुसंधान के लिए किसी विषय के चयन की बुनियादी पूर्व-आवश्यकताएँ क्या हैं?
Q4 संगीत में शोध के लिए सारांश तैयार करने की महत्वपूर्ण विशेषताओं के बारे में विस्तार से वर्णन कीजिए।

खंड-सी

- Q5 सूफी संगीत की विभिन्न गायन शैलियों के बारे में आप क्या जानते हैं?
Q6.संगीत और योग के अंतर-संबंध के बारे में लिखिए।

खंड-डी

- Q7. संगीत और भौतिकी का क्या संबंध है? विस्तार से वर्णन करें।
Q8 व्याख्या कीजिए कि संगीत सीखने और सिखाने में मनोविज्ञान किस प्रकार महत्वपूर्ण भूमिका निभाता है।

Exam Code: 216504
(20)

Paper Code: 4166

Programme: Master of Arts (Punjabi)
Semester-IV

Course Title: Vishav Classiki Sahit

Course Code: MPBL-4421 ✓

Time Allowed: 3 Hours

Max Marks: 64

ਨੋਟ: ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ ਪੰਜ ਸੈਕਸ਼ਨ ਹਨ। ਪਹਿਲੇ ਸੈਕਸ਼ਨ ਵਿਚੋਂ ਦੋ-ਦੋ ਅੰਕਾਂ ਵਾਲੇ ਅੱਠ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਲਾਜ਼ਮੀ ਹਨ। ਸੈਕਸ਼ਨ ਦੂਜਾ, ਤੀਜਾ, ਚੌਥਾ ਅਤੇ ਪੰਜਵਾਂ ਵਿਚੋਂ ਇਕ-ਇਕ ਪ੍ਰਸ਼ਨ ਕਰਨਾ ਲਾਜ਼ਮੀ ਹੈ। ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ 12 ਅੰਕ ਹਨ।

ਸੈਕਸ਼ਨ-1

1. ਕੋਈ ਅੱਠ ਪ੍ਰਸ਼ਨ ਲਿਖੋ-
 - (ੳ) 'ਬੁੱਢਾ ਤੇ ਸਮੁੰਦਰ' ਪੁਸਤਕ ਦਾ ਅਨੁਵਾਦ ਕਿਸ ਲੇਖਕ ਵੱਲੋਂ ਕੀਤਾ ਗਿਆ ਹੈ?
 - (ਅ) 'ਬੁੱਢਾ ਤੇ ਸਮੁੰਦਰ' ਪੁਸਤਕ ਦੇ ਸਿਰਲੇਖ ਤੋਂ ਕੀ ਭਾਵ ਹੈ?
 - (ੲ) 'ਬੁੱਢਾ ਤੇ ਸਮੁੰਦਰ' ਪੁਸਤਕ ਨੂੰ ਕਿਹੜੇ ਸਨਮਾਨ ਪ੍ਰਾਪਤ ਹੋਏ?
 - (ਸ) ਚੈਖਵ ਦੀ ਕਹਾਣੀ 'ਤਿਤਲੀ' ਦਾ ਵਿਸ਼ਾ ਲਿਖੋ।
 - (ਹ) 'ਚੈਖਵ ਦੀਆਂ ਚੋਣਵੀਆਂ ਕਹਾਣੀਆਂ' ਪੁਸਤਕ ਦੀ ਕਿਸੇ ਇਕ ਕਹਾਣੀ ਦਾ ਵਿਸ਼ਾ ਲਿਖੋ।
 - (ਕ) 'ਪੈਰੀਬਰ' ਪੁਸਤਕ ਦੇ ਅਨੁਵਾਦਕ ਦਾ ਨਾਂ ਦੱਸੋ।

- (ਖ) 'ਪੈਗੰਬਰ' ਪੁਸਤਕ ਵਿੱਚ ਪਿਆਰ ਅਤੇ ਮੌਤ ਬਾਰੇ ਕਿਹੜੇ ਦਾਰਸ਼ਨਿਕ ਵਿਚਾਰ ਪੇਸ਼ ਕੀਤੇ ਗਏ ਹਨ?
(ਗ) 'ਪੈਗੰਬਰ' ਪੁਸਤਕ ਦੇ ਵਿਸ਼ਿਆ ਬਾਰੇ ਦੱਸੋ।
(ਘ) 'ਪੈਗੰਬਰ' ਪੁਸਤਕ ਵਿੱਚ ਕਿਸ ਨਬੀ ਦੇ ਕਿੰਨੇ ਰੂਹਾਨੀ ਪੈਗਾਮ ਦਰਜ ਹਨ?
(ਙ) 'ਪੈਗੰਬਰ' ਸ਼ਬਦ ਤੋਂ ਕੀ ਭਾਵ ਹੈ?

(8*2=16 ਅੰਕ)

ਸੈਕਸ਼ਨ-2

2. ਪੱਛਮੀ ਕਲਾਸਿਕੀ ਨਾਵਲ ਦੇ ਉਦਭਵ ਅਤੇ ਵਿਕਾਸ ਤੇ ਨੋਟ ਲਿਖੋ।
3. ਪੱਛਮ ਵਿੱਚ ਨਿੱਕੀ ਕਹਾਣੀ ਦੇ ਉਦਭਵ ਅਤੇ ਵਿਕਾਸ ਤੇ ਨੋਟ ਲਿਖੋ।
12 ਅੰਕ

ਸੈਕਸ਼ਨ-3

4. ਚੈਕਵ ਦੀਆਂ ਕਹਾਣੀਆਂ ਦਾ ਵਿਸ਼ਾਗਤ ਪਸਾਰ ਲਿਖੋ।
5. ਚੈਕਵ ਜੀਵਨ ਤੇ ਰਚਨਾ ਤੇ ਨੋਟ ਲਿਖੋ।
12 ਅੰਕ

ਸੈਕਸ਼ਨ-4

6. ਖਲੀਲ ਜਿਬਰਾਨ ਦੇ ਜੀਵਨ ਅਤੇ ਰਚਨਾ ਤੇ ਨੋਟ ਲਿਖੋ।
7. 'ਪੈਗੰਬਰ' ਪੁਸਤਕ ਦੇ ਦਾਰਸ਼ਨਿਕ ਪਰਿਪੇਖ ਤੇ ਨੋਟ ਲਿਖੋ।
12 ਅੰਕ

ਸੈਕਸ਼ਨ-5

8. 'ਬੁੱਢਾ ਤੇ ਸਮੁੰਦਰ' ਨਾਵਲ ਦੇ ਥੀਮਕ ਪਾਸਾਰ ਤੇ ਚਰਚਾ ਕਰੋ।
9. 'ਬੁੱਢਾ ਤੇ ਸਮੁੰਦਰ' ਨਾਵਲ ਦੀ ਨਾਵਲ ਕਲਾ ਬਾਰੇ ਦੱਸੋ।
12 ਅੰਕ

Exam Code: 216504
(20)

Paper Code: 4167

Programme: Master of Arts (Punjabi)
Semester-IV

Course Title: Punjabi Kahani

Course Code: MPBL-4422 ✓

Time Allowed: 3 Hours

Max Marks: 64

ਨੋਟ: ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ ਪੰਜ ਸੈਕਸ਼ਨ ਹਨ। ਪਹਿਲੇ ਸੈਕਸ਼ਨ ਵਿਚੋਂ ਦੋ-ਦੋ ਅੰਕਾਂ ਵਾਲੇ ਅੱਠ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਲਾਜ਼ਮੀ ਹਨ। ਸੈਕਸ਼ਨ ਦੂਜਾ, ਤੀਜਾ, ਚੌਥਾ ਅਤੇ ਪੰਜਵਾਂ ਵਿਚੋਂ ਇਕ-ਇਕ ਪ੍ਰਸ਼ਨ ਕਰਨਾ ਲਾਜ਼ਮੀ ਹੈ। ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ 12 ਅੰਕ ਹਨ।

ਸੈਕਸ਼ਨ-1

1. a. ਕਹਾਣੀ ਦੀ ਪਰਿਭਾਸ਼ਾ ਦਿਓ।
b. 'ਦੁਆਦਸ਼ੀ' ਕਹਾਣੀ ਸੰਗ੍ਰਹਿ ਵਿੱਚ ਕੁੱਲ ਕਿੰਨੀਆਂ ਕਹਾਣੀਆਂ ਸ਼ਾਮਿਲ ਹਨ।
c. 'ਛਾਹ ਵੇਲਾ' ਕਹਾਣੀ ਦੇ ਕੇਂਦਰੀ ਪਾਤਰ ਤੇਜੂ ਦੀ ਮਨੋ ਸਥਿਤੀ ਵਿੱਚ ਛਾਹ ਵੇਲਾ ਖਾਣ ਤੋਂ ਬਾਅਦ ਕੀ ਤਬਦੀਲੀ ਆਉਂਦੀ ਹੈ?
d. 'ਚੋਥੀ ਕੂਟ' ਕਹਾਣੀ ਸੰਗ੍ਰਹਿ ਦੀਆਂ ਵਧੇਰੇ ਕਹਾਣੀਆਂ ਕਿਸ ਵਿਸ਼ੇ ਨਾਲ ਸੰਬੰਧਿਤ ਹਨ?
e. 'ਮੈਂ ਹੁਣ ਠੀਕ ਠਾਕ ਹਾਂ' ਕਹਾਣੀ ਵਿੱਚ ਲੇਖਕ ਕੁੱਤੇ ਦੇ ਮੋਟਿਫ ਰਾਹੀਂ ਕੀ ਵਿਅੰਗ ਸਿਰਜਦਾ ਹੈ?
f. 'ਧਰਤੀ ਹੇਠਲਾ ਬੋਲਦ' ਕਹਾਣੀ ਵਿੱਚ ਬੋਲਦ ਦੇ ਪ੍ਰਤੀਕ ਦੀ ਵਰਤੋਂ ਕਿਸ ਪਾਤਰ ਦੇ ਲਈ ਕੀਤੀ ਗਈ ਹੈ?

- g. ਪਹਿਲੇ ਪੜਾਅ ਦੇ ਦੋ ਪੰਜਾਬੀ ਕਹਾਣੀਕਾਰਾਂ ਦੇ ਨਾਂ ਦੱਸੋ?
h. 'ਚੂੜੇ ਵਾਲੀ ਬਾਂਹ' ਕਹਾਣੀ ਦੀ ਕੇਂਦਰੀ ਸਮੱਸਿਆ ਕੀ ਹੈ?
i. 'ਪੰਜਾਬੀ ਕਹਾਣੀ ਦੀ ਨਵੀਨ ਧਾਰਾ' ਪੁਸਤਕ ਦਾ ਸੰਪਾਦਕ ਕੌਣ ਹੈ?
j. 'ਦੁਆਦਸ਼ੀ' ਕਹਾਣੀ ਸੰਗ੍ਰਹਿ ਵਿਚ ਆਪਣੀ ਮਨਪਸੰਦ ਕਹਾਣੀ ਦੇ ਵਿਸ਼ੇ ਬਾਰੇ ਸੰਖੇਪ ਚਰਚਾ ਕਰੋ।

8*2=16

ਸੈਕਸ਼ਨ-2

2. ਮੁੱਢਲੀ ਪੰਜਾਬੀ ਕਹਾਣੀ ਤੇ ਨੋਟ ਲਿਖੋ।
3. ਪ੍ਰਗਤੀਵਾਦੀ ਪੰਜਾਬੀ ਕਹਾਣੀ ਬਾਰੇ ਚਰਚਾ ਕਰੋ।

12

ਸੈਕਸ਼ਨ-3

4. 'ਦੁਆਦਸ਼ੀ' ਕਹਾਣੀ ਸੰਗ੍ਰਹਿ ਵਿਚ ਦਰਜ ਕਹਾਣੀਆਂ ਦੇ ਕਥਾ ਵਸਤੂ ਦੇ ਵਿਭਿੰਨ ਪਸਾਰਾ ਬਾਰੇ ਚਰਚਾ ਕਰੋ।
5. 'ਦੁਆਦਸ਼ੀ' ਕਹਾਣੀ ਸੰਗ੍ਰਹਿ ਵਿਚਲੀਆਂ ਕਹਾਣੀਆਂ ਦੇ ਪ੍ਰਮੁੱਖ ਪਾਤਰਾਂ ਬਾਰੇ ਚਰਚਾ ਕਰੋ।

12

ਸੈਕਸ਼ਨ-4

6. 'ਚੋਥੀ ਕੂਟ' ਕਹਾਣੀ ਸੰਗ੍ਰਹਿ ਤੇ ਆਲੋਚਨਾਤਮਕ ਨੋਟ ਲਿਖੋ।
7. ਵਰਿਆਮ ਸਿੰਘ ਸੰਧੂ ਦੀ ਕਹਾਣੀ ਕਲਾ ਬਾਰੇ ਚਰਚਾ ਕਰਦੇ ਹੋਏ ਇਸ ਦਾ ਪੰਜਾਬੀ ਕਹਾਣੀ ਵਿਚ ਸਥਾਨ ਨਿਸ਼ਚਿਤ ਕਰੋ।

12

ਸੈਕਸ਼ਨ-5

8. 'ਪੰਜਾਬੀ ਕਹਾਣੀ ਦੀ ਨਵੀਨ ਧਾਰਾ' ਵਿਚ ਦਰਜ ਕਹਾਣੀਆਂ ਦੇ ਲੇਖਕਾਂ ਦੇ ਜੀਵਨ ਤੇ ਰਚਨਾ ਬਾਰੇ ਜਾਣਕਾਰੀ ਦਿਓ
9. 'ਪੰਜਾਬੀ ਕਹਾਣੀ ਦੀ ਨਵੀਨ ਧਾਰਾ' ਕਹਾਣੀ ਸੰਗ੍ਰਹਿ ਤੇ ਆਲੋਚਨਾਤਮਕ ਨੋਟ ਲਿਖੋ।

12

Exam Code: 216504
(20)

Paper Code: 4168

Programme: Master of Arts (Punjabi)
Semester-IV

Course Title: Punjabi Bhasha ate Bhasha Vigyan-II

Course Code: MPBL-4423

Time Allowed: 3 Hours

Max Marks: 64

ਨੋਟ-ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ 5 ਸੈਕਸ਼ਨ ਹਨ। ਪਹਿਲੇ ਸੈਕਸ਼ਨ ਵਿਚੋਂ 10 ਪ੍ਰਸ਼ਨਾਂ ਵਿਚੋਂ 8 ਪ੍ਰਸ਼ਨਾਂ ਕਰੋ। ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ 2 ਅੰਕ ਹਨ। ਹਰ ਪ੍ਰਸ਼ਨ ਦਾ ਉੱਤਰ 50 ਸ਼ਬਦਾਂ ਵਿਚ ਲਿਖੋ। B,C,D ਅਤੇ E ਸੈਕਸ਼ਨ ਵਿਚੋਂ ਇਕ ਇਕ ਪ੍ਰਸ਼ਨ ਕਰਨਾ ਲਾਜ਼ਮੀ ਹੈ। ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ 12 ਅੰਕ ਹਨ।

ਸੈਕਸ਼ਨ A

1. a. ਭਾਵੰਸ਼ ਦੀ ਪਰਿਭਾਸ਼ਾ ਦਿਓ ਇਹਨਾਂ ਦੀਆਂ ਕਿਸਮਾਂ ਬਾਰੇ ਵੀ ਦੱਸੋ?
- b. ਸੰਯੁਕਤ ਵਾਕ ਅਤੇ ਮਿਸ਼ਰਤ ਵਾਕ ਦਾ ਅੰਤਰ ਸਪੱਸ਼ਟ ਕਰੋ?
- c. ਵਾਕੰਸ਼ ਦੀ ਪਰਿਭਾਸ਼ਾ ਦਿਓ?
- e. ਭਾਰਤੀ ਅਰਥ ਪਰੰਪਰਾ ਬਾਰੇ ਤੁਸੀਂ ਕੀ ਜਾਣਦੇ ਹੋ?
- d. ਆਰਥੋਗਰਾਫੀ ਬਾਰੇ ਤੁਸੀਂ ਕੀ ਜਾਣਦੇ ਹੋ?
- f. ਬਿੰਦੀ ਅਤੇ ਟਿੱਪੀ ਦੀ ਵਰਤੋਂ ਦੇ ਕੀ ਨੇਮ ਹਨ?
- g. ਕਾਲ ਅਤੇ ਸਮੇਂ ਦੇ ਅੰਤਰ ਨੂੰ ਸਪੱਸ਼ਟ ਕਰੋ?
- h. ਆਸਪੈਕਟ ਬਾਰੇ ਜਾਣਕਾਰੀ ਦਿਓ?
- i. ਵਚਨ ਅਤੇ ਗਿਣਤੀ ਦੇ ਭੇਦ ਨੂੰ ਦੱਸੋ?

j. ਅਧਿਕਰਣ ਕਾਰਕ ਦੀ ਪਰਿਭਾਸ਼ਾ ਦਿਓ?

(8*2=16)

ਸੈਕਸ਼ਨ-B

2. ਪੰਜਾਬੀ ਵਾਕ ਬਣਤਰ ਬਾਰੇ ਵਿਸਥਾਰ ਸਹਿਤ ਜਾਣਕਾਰੀ ਦਿਓ?
3. ਵਿਆਕਰਣਕ ਵਰਗ ਲਿੰਗ, ਵਚਨ, ਪੁਰਖ ਤੇ ਆਸਪੈਕਟ ਬਾਰੇ ਜਾਣਕਾਰੀ ਦਿਓ? (12)

ਸੈਕਸ਼ਨ-C

4. ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦੇ ਨਿਕਾਸ ਤੇ ਵਿਕਾਸ ਦੀ ਜੁਗਤ ਤੇ ਵਰਤੋਂ ਦੱਸੋ?
5. ਅਰਥ ਵਿਗਿਆਨ ਦੀ ਪਰਿਭਾਸ਼ਾ ਦੱਸ ਕੇ ਭਾਰਤੀ ਅਰਥ ਪਰੰਪਰਾ ਬਾਰੇ ਜਾਣਕਾਰੀ ਦਿਓ? (12)

ਸੈਕਸ਼ਨ-D

6. ਭਾਸ਼ਾ ਅਤੇ ਉਪਭਾਸ਼ਾ ਦੇ ਸਿਧਾਂਤਕ ਸੰਕਲਪ ਬਾਰੇ ਚਰਚਾ ਕਰੋ?
7. ਪੰਜਾਬੀ ਦੀਆਂ ਉਪਭਾਸ਼ਾਵਾਂ ਦੇ ਖੇਤਰ ਤੇ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ ਲਿਖੋ? (12)

ਸੈਕਸ਼ਨ-E

8. ਗੁਰਮੁਖੀ ਆਰਥੋਗਰਾਫੀ ਦੇ ਤੱਤ ਤੇ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ ਦੱਸੋ?
9. ਪੰਜਾਬੀ ਸ਼ਬਦ ਜੋੜਾਂ ਦੇ ਨੇਮ ਦੱਸੋ? (12)

Exam Code: 216504
(20)

Paper Code: 4169

Programme: Master of Arts (Punjabi)
Semester-IV

Course Title: Punjabi Vartak-II

Course Code: MPBL-4424 ✓

Time Allowed: 3 Hours

Max Marks: 64

ਨੋਟ-ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ ਪੰਜ ਸੈਕਸ਼ਨ ਹਨ। ਪਹਿਲੇ ਸੈਕਸ਼ਨ ਵਿਚੋਂ ਦੋ-ਦੋ ਅੰਕਾਂ ਵਾਲੇ ਅੱਠ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਲਾਜ਼ਮੀ ਹਨ। ਸੈਕਸ਼ਨ ਦੂਜਾ, ਤੀਜਾ, ਚੌਥਾ ਅਤੇ ਪੰਜਵਾਂ ਵਿਚੋਂ ਇਕ-ਇਕ ਪ੍ਰਸ਼ਨ ਕਰਨਾ ਲਾਜ਼ਮੀ ਹੈ। ਹਰੇਕ ਪ੍ਰਸ਼ਨ 12 ਅੰਕਾਂ ਦਾ ਹੈ।

ਸੈਕਸ਼ਨ-1

1. a 'ਆਰਸੀ' ਸਵੈ-ਜੀਵਨੀ ਵਿਚ ਕੁੱਲ ਕਿੰਨੇ ਕਾਂਡ ਹਨ?
b ਪ੍ਰਿੰਸਿਪਲ ਤੇਜਾ ਸਿੰਘ ਦੀਆਂ ਦੋ ਹੋਰ ਵਾਰਤਕ ਜਚਨਾਵਾਂ ਦੇ ਨਾਂ ਦੱਸੋ।
c ਰੇਖਾ ਚਿੱਤਰ ਦੀ ਪਰਿਭਾਸ਼ਾ ਦਿਓ।
d 'ਨਿੰਮ ਦੇ ਪੱਤੇ' ਪੁਸਤਕ ਵਿਚ ਕੁੱਲ ਕਿੰਨੇ ਰੇਖਾ ਚਿੱਤਰ ਦਰਜ ਹਨ?
e 'ਨਿੰਮ ਦੇ ਪੱਤੇ' ਪੁਸਤਕ ਦੇ ਆਧਾਰ ਤੇ ਪ੍ਰੋਫੈਸਰ ਮੋਹਨ ਸਿੰਘ ਦਾ ਕਿਹੋ ਜਿਹਾ ਅਕਸ ਉੱਭਰਦਾ ਹੈ?
f ਬਲਵੰਤ ਗਾਰਗੀ ਦੀਆਂ ਰੇਖਾ ਚਿੱਤਰ ਪੁਸਤਕਾਂ ਦੇ ਨਾਂ ਦੱਸੋ?
g ਨਰਿੰਦਰ ਸਿੰਘ ਕਪੂਰ ਨੇ ਅਮੀਰਕਨ ਲੋਕਾਂ ਦੇ ਮਨ ਪਰਚਾਵੇ ਦੇ ਸਾਧਨਾਂ ਬਾਰੇ ਕੀ ਦੱਸਿਆ ਹੈ?
h 'ਸੱਚੇ ਸੱਚ' ਪੁਸਤਕ ਦੇ ਸਿਰਲੇਖ ਦੀ ਚਰਚਾ ਕਰੋ?

i 'ਅੱਲ੍ਹੜ ਉਮਰਾਂ ਤਲਖ ਸੁਨੇਹੇ' ਪੁਸਤਕ ਦੇ ਥੀਮਕ ਪੱਖ ਨੂੰ ਸੰਖੇਪ ਵਿੱਚ ਸਪੱਸ਼ਟ ਕਰੋ।

j 'ਅੱਲ੍ਹੜ ਉਮਰਾਂ ਤਲਖ ਸੁਨੇਹੇ' ਪੁਸਤਕ ਦੇ ਸਿਰਲੇਖ ਤੇ ਸੰਖੇਪ ਨੋਟ ਲਿਖੋ। 2×8=16

ਸੈਕਸ਼ਨ-2

2. 'ਆਰਸੀ' ਵਿੱਚ ਲੇਖਕ ਦੇ ਆਤਮ ਬਿੰਬ ਬਾਰੇ ਚਰਚਾ ਕਰੋ।
3. ਆਰਸੀ ਨੂੰ ਇਤਿਹਾਸਕ ਦ੍ਰਿਸ਼ਟੀ ਤੋਂ ਪਰਖੋ। 12

ਸੈਕਸ਼ਨ-3

4. ਬਲਵੰਤ ਗਾਰਗੀ ਦੇ ਜੀਵਨ ਤੇ ਰਚਨਾ ਬਾਰੇ ਚਰਚਾ ਕਰੋ।
5. 'ਨਿੰਮ ਦੇ ਪੱਤੇ' ਪੁਸਤਕ ਦੇ ਕਲਾਤਮਕ ਪੱਖ ਤੇ ਨੋਟ ਲਿਖੋ। 12

ਸੈਕਸ਼ਨ-4

6. ਨਰਿੰਦਰ ਸਿੰਘ ਕਪੂਰ ਦੇ ਜੀਵਨ ਅਤੇ ਰਚਨਾ ਤੇ ਨੋਟ ਲਿਖੋ।
7. 'ਸੱਚੇ ਸੱਚ ਦੇ ਥੀਮਕ ਸਰੋਕਾਰਾਂ ਬਾਰੇ ਵਿਸਥਾਰ ਸਹਿਤ ਜਾਣਕਾਰੀ ਦਿਓ। 12

ਸੈਕਸ਼ਨ-5

8. 'ਅੱਲ੍ਹੜ ਉਮਰਾਂ ਤਲਖ ਸੁਨੇਹੇ' ਪੁਸਤਕ ਦੇ ਥੀਮਕ ਸਰੋਕਾਰਾਂ ਬਾਰੇ ਜਾਣਕਾਰੀ ਦਿਓ।
9. 'ਅੱਲ੍ਹੜ ਉਮਰਾਂ ਤਲਖ ਸੁਨੇਹੇ' ਪੁਸਤਕ ਦੇ ਕਲਾ ਪੱਖ ਤੇ ਚਰਚਾ ਕਰੋ। 12

Exam Code: 216504
(20)

Paper Code: 4170

Programme: Master of Arts (Punjabi)
Semester-IV

Course Title: Prvasi Punjabi Sahit

Course Code: MPBL-4425 (Opt-I) ✓

Time Allowed: 3 Hours

Max Marks: 64

ਨੋਟ-ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ ਪੰਜ ਸੈਕਸ਼ਨ ਹਨ। ਪਹਿਲੇ ਸੈਕਸ਼ਨ ਵਿਚੋਂ ਦੋ-ਦੋ ਅੰਕਾਂ ਵਾਲੇ ਅੱਠ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਲਾਜ਼ਮੀ ਹਨ। ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦਾ ਉੱਤਰ 50 ਸ਼ਬਦਾਂ ਵਿਚ ਹੋਣਾ ਚਾਹੀਦਾ ਹੈ। ਸੈਕਸ਼ਨ ਦੂਜਾ, ਤੀਜਾ, ਚੌਥਾ ਅਤੇ ਪੰਜਵਾਂ ਵਿਚੋਂ ਇਕ- ਇਕ ਪ੍ਰਸ਼ਨ ਕਰਨਾ ਲਾਜ਼ਮੀ ਹੈ। ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ 12 ਅੰਕ ਹਨ।

ਸੈਕਸ਼ਨ-1

1. ਪਰਵਾਸ ਸ਼ਬਦ ਨੂੰ ਪਰਿਭਾਸ਼ਿਤ ਕਰੋ।
2. ਡਾਇਸਪੋਰਾ ਤੋਂ ਕੀ ਭਾਵ ਹੈ।
3. ਪਰਵਾਸੀ ਪੰਜਾਬੀ ਸਾਹਿਤ ਨਾਲ ਸੰਬੰਧਤ ਕੋਈ ਦੋ ਆਲੋਚਾਤਮਕ ਪੁਸਤਕਾਂ ਦੇ ਨਾਮ ਲਿਖੋ।
4. ਭੂ ਹੋਰਵਾ ਨੂੰ ਪਰਿਭਾਸ਼ਿਤ ਕਰੋ।
5. ਪਰਵਾਸੀ ਪੰਜਾਬੀ ਸਾਹਿਤ ਵਿਚ ਪੇਸ਼ ਹੋਏ ਸੰਕਲਪ ਪੀੜ੍ਹੀ ਪਾੜਾ ਬਾਰੇ ਜਾਣਕਾਰੀ ਦਿਓ।
6. ਪਰਵਾਸੀ ਸਾਹਿਤ ਵਿਚ 'ਪਰਵਾਸੀ ਚੇਤਨਾ' ਤੋਂ ਕੀ ਭਾਵ ਹੈ?
7. 'ਪਰਵਾਸੀ ਪੰਜਾਬੀ ਕਵਿਤਾ' ਕਾਵਿ ਸੰਗ੍ਰਹਿ ਵਿਚ ਕਿਹੜੇ ਦੋਸ਼ਾਂ ਦੇ ਪੰਜਾਬੀ ਕਵੀਆਂ ਜਾ ਜ਼ਿਕਰ ਹੈ।

8. ਭੰਵਰ ਸ਼ਬਦ ਨੂੰ ਪਰਿਭਾਸ਼ਿਤ ਕਰੋ।
9. ਮੇਪਲ ਦੇ ਰੰਗ ਕਹਾਣੀ ਸੰਗ੍ਰਹਿ ਕਿਹੜੇ ਦੇਸ਼ ਦੇ ਪੰਜਾਬੀਆਂ ਦੀ ਮਨੋਦਸ਼ਾ ਨੂੰ ਪੇਸ਼ ਕਰਦਾ ਹੈ।
10. ਪਰਵਾਸੀ ਪੰਜਾਬੀ ਸਾਹਿਤ ਵਿਚ ਪੇਸ਼ ਹੋਏ ਸੱਭਿਆਚਾਰ ਤਣਾਓ ਤੋਂ ਕੀ ਭਾਵ ਹੈ।

2*8=16

ਸੈਕਸ਼ਨ-2

2. ਪਰਵਾਸੀ ਪੰਜਾਬੀ ਸਾਹਿਤ ਦੇ ਸਿਧਾਂਤਕ ਪਰਿਪੇਖ ਤੇ ਚਰਚਾ ਕਰੋ।
3. ਪਰਵਾਸੀ ਪੰਜਾਬੀ ਸਾਹਿਤ ਦੇ ਮੂਲ ਸਰੋਕਾਰਾਂ ਬਾਰੇ ਜਾਣਕਾਰੀ ਦਿਓ।

12

ਸੈਕਸ਼ਨ-3

4. ਸ.ਪ ਸਿੰਘ ਦੁਆਰਾ (ਸੰਪਾ) ਪੁਸਤਕ ਪਰਵਾਸੀ ਪੰਜਾਬੀ ਕਵਿਤਾ ਵਿੱਚ ਪੇਸ਼ ਹੋਈ ਪਰਵਾਸੀ ਚੇਤਨਾ ਤੇ ਚਰਚਾ ਕਰੋ।
5. ਪਰਵਾਸੀ ਪੰਜਾਬੀ ਕਵਿਤਾ ਦਾ ਥੀਮਿਕ ਅਧਿਐਨ ਕਰੋ।

12

ਸੈਕਸ਼ਨ-4

6. ਨਾਵਲਕਾਰ ਹਰਮਹਿੰਦਰ ਚਾਹਲ ਦੇ ਜੀਵਨ ਅਤੇ ਰਚਨਾ ਉੱਪਰ ਨੋਟ ਲਿਖੋ।
7. ਭੰਵਰ ਨਾਵਲ ਦੀ ਕੇਂਦਰੀ ਸਮੱਸਿਆ ਨੂੰ ਵਿਸਥਾਰ ਪੂਰਵਕ ਬਿਆਨ ਕਰੋ।

12

ਸੈਕਸ਼ਨ-5

8. ਮੇਪਲ ਦੇ ਰੰਗ ਕਹਾਣੀ ਸੰਗ੍ਰਹਿ ਦਾ ਵਿਸ਼ਾਗਤ ਅਧਿਐਨ ਕਰੋ।
9. ਪਰਵਾਸੀ ਕਹਾਣੀਕਾਰ ਜਰਨੈਲ ਸਿੰਘ ਦੇ ਜੀਵਨ ਅਤੇ ਰਚਨਾ ਤੇ ਚਰਚਾ ਕਰੋ।

12

Exam Code: 209004
(20)

Paper Code: 4213

Programme: Master of Science(Physics)
Semester-IV

Course Title: Particle Physics

Course Code: MPHL-4391 ✓

Time Allowed: 3 Hours

Max Marks: 80

Note: Attempt five questions in all selecting at least one question from each section. Fifth question can be attempted from any section. Each question carries equal marks. Use of non-programmable calculator is allowed.

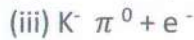
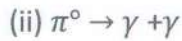
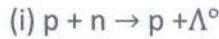
Section A

1. Determine the spin, parity and mass of a charged pion. 16
2. (a) Explain the four fundamental forces of nature with an example in each case. Compare their relative range and strength. 10
(b) Describe the method to measure the mass of K^+ . 6

Section B

3. (a) Why strange particles are called strange? How strangeness is assigned to these particles? 8

(b) Which of the following interactions are forbidden? If forbidden, state the laws that are violated.



4. What is quark model? Construct the baryon decuplet indicating the strangeness, charge, isospin and quark content of each baryon. 16

Section-C

5. (a) Discuss the classification of weak interactions and the selection rules followed in such interactions. 12

(b) What is helicity? How a neutrino is different an anti-neutrino? 4

6. (a) What is parity and how parity of a system of particles is obtained? 4

(b) Explain parity violation in Λ^0 decay to a proton and a negative pion. 12

Section-D

7. Describe the mechanism of obtaining the field equations for particles with spin-0, spin-1/2 and spin-1.

16

8. (a) What are Feynmann diagrams? Discuss the Feynmann rules to obtain matrix element of particle interactions. 12

(b) Draw Feynmann diagrams for neutron decay. 4

Code: 209004
(20)

Paper Code: 4214

Programme: Master of Science(Physics)
Semester-IV

Course Title: Statistical Mechanics

Course Code: MPHL-4392 ✓

Time Allowed: 3 Hours

Max Marks: 80

Candidates are required to attempt five questions, selecting at least one question from section. The fifth question may be attempted from any section. Each question carries marks.

Section-A

- (i) Consider two physical systems A_1 and A_2 brought in thermal contact and derive an expression for entropy. (8)
- (ii) What is entropy of mixing? Discuss how the entropy of mixing of samples of two dissimilar gases is different from zero and lead to Gibb's Paradox. (8)

State and prove Liouville's theorem. Discuss its consequences. How do they lead to the description of a microcanonical and a canonical ensemble? (16)

Section-B

Deduce an expression for grand partition function using equation

$$q = \ln \{ \sum_{r,s} \exp(-\alpha N_r - \beta E_s) \} \quad (16)$$

- (i) Show that energy fluctuation in canonical ensemble follow Gaussian distribution in E with mean value U and dispersion $\sqrt{kT^2 C_v}$. Plot $g(E) e^{-\beta E}$ vs E . (8)
- (ii) Derive an expression for fugacity of an ideal Bose gas and show that it decreases asymptotically as a function of temperature. (8)

Section-C

- (i) What is difference between Microcanonical, Canonical and Grand Canonical Ensemble. Which is the most suitable for describing a thermodynamic system and why? (8)
- (ii) Discuss energy and density function of grand canonical ensemble and discuss the correspondence with other ensembles. (8)

What do you mean by Mean Occupation Number of a single particle state and show that bosons exhibit a positive statistical correlation and fermion exhibit a negative statistical correlation. (16)

Section-D

- (i) Explain magnetic behavior of an ideal Fermi gas. (8)
- (ii) For an ideal Bose gas show that
- $$\frac{Cv}{NK} = \frac{15}{4} \frac{g_{5/2}(Z)}{g_{3/2}(Z)} - \frac{9}{4} \frac{g_{3/2}(Z)}{g_{1/2}(Z)} \quad \text{for } T > T_c. \quad (8)$$

Define the mean thermal wavelength of a particle. Why is it known as 'wavelength'? Discuss the phenomenon of Bose-Einstein condensation. (16)

Exam Code: 209004
(20)

Paper Code: 4215

Programme: Master of Science(Physics)
Semester-IV

Course Title: Radiation Physics

Course Code: MPHL-4393 (Opt-II)

Time Allowed: 3 Hours

Max Marks: 80

Note: Attempt five questions, selecting at least one question from each section. Fifth question may be attempted from any section. Each question carries 16 marks.

Section-A

1. Explain in detail the following
 - (a) Free air chamber and air wall chamber
 - (b) Bragg Gray Principle (16)
2. Write different radiation dose units and discuss different types of sources of ionizing radiations (16)

Section B

3. Write a note on each of the following
 - (a) Pocket Dosimeter
 - (b) Chemical detectors (16)

4. Explain the working of Solid state Nuclear Track detectors and Neutron detectors. (16)

Section C

5. Explain the following terms
(a) Stochastic and non stochastic effects
(b) linear energy transfer
(c) Relative Biological effectiveness
(d) ALARA (16)
6. Explain the concept of Single target, Multi target and Multi-hit theories in the context of radiation. (16)

Section D

7. Discuss the following
(a) thermal and Biological shields
(b) Point Kernel technique and exponential point Kernel. (16)
8. Write a note on radiation attenuation calculations from a uniform plane source and also discuss time, distance and shielding rules. (16)

Exam Code: 209004

Paper Code: 4216

Programme: Master of Science (Physics) Semester-IV

Course Title: Material Science

Course Code: MPHL-4394 (OPT-V)

Time Allowed: 3 Hours

Max. Marks: 80

Note: Attempt five questions in all, selecting at least one from each section. The fifth question may be attempted from any section. Each question carries 16 marks.

Section-A

1. Explain in detail about the following deposition techniques
a. Physical Vapour Deposition b. Chemical Vapour deposition 8+8
2. Explain in detail regarding role of Adatoms and surface diffusion in thin film growth. 16

Section-B

3. What are composites, and how do they differ from conventional engineering materials? What are different types of composites? Explain their properties and applications. 4x4=16
4. A. What are different types of reinforcement materials used in composites, and how do they affect the mechanical and physical properties of the composites? 8
B. What are the different types of matrix materials used in composites, and how do they affect the properties of the resulting composites? 8

Section-C

5. What are the advantages and limitations of SEM over TEM? How can SEM be used to investigate the mechanical properties of materials such as fracture surfaces and deformation behavior? 16
6. Explain the factors affecting the photoluminescence properties of a material. Explain in details applications of Photoluminescence spectroscopy. What are the advantages and disadvantages of using the technique? 16

Section-D

7. A. Explain the concept of depth profiling in SIMS spectroscopy and its significance in material analysis. 8
B. Describe the imaging capabilities of SIMS spectroscopy and how it can be used to generate elemental or molecular images of sample surfaces. 8
8. A. What is X-ray fluorescence and how does it work? 8
B. Give detailed Differences between WDXRF and EDXRF. 8

Exam Code: 910204
(30)

Paper Code: 4156

Programme: Master of Arts (Psychology)
Semester-IV

Course Title: Research Methodology

Course Code: MSYL-4441 ✓

Time Allowed: 3 Hours

Max Marks: 80

Note: Attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section. Each question carries 16 marks.

SECTION — A

1. What is Research? Explain in detail the stages of conducting research. 16
2. Discuss any two Descriptive methods of conducting scientific research. 16

SECTION — B

3. What is meant by Sampling? Discuss the Probability and Non-Probability Sampling Methods in detail. Illustrate by appropriate examples. 8,8
4. What is Cross-Cultural Research? Discuss its nature and types. 16

SECTION — C

5. Differentiate between Qualitative research and Non-
Qualitative Research. 16
6. Write a note on the following:
 - a. Participant Observation
 - b. Qualitative Research. 8,8

SECTION — D

7. Write note on the method of Interview. Discuss its
types. 16
8. What is meant by the concept of Sociometry? Discuss in
brief its method of analysis. 16

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Exe

KMV-II

Exam Code: 910204
(30)

Paper Code: 4157

Programme: Master of Arts (Psychology)
Semester-IV

Course Title: Applied Psychology

Course Code: MSYL- 4442 ✓

Time Allowed: 3 Hours

Max Marks: 80

Note: Candidates are required to attempt five questions, selecting at least one from each section. The fifth question may be attempted from any section. Each question carries 16 marks.

Section A

1. Discuss how social cognition factors reduce accuracy in eyewitness testimony. 16
2. How do the characteristics of the Judge, attorney, defendant and Juror affect the outcome of trial? 16

Section B

3. (a) What is the concept of Environment Psychology?
(b) Write a note on Density and Crowding.

8+8=16

4. What role can psychology play in Environmental Management? 16

Section C

5. Explain the key components and nature of the field of organisational psychology. 16
6. What is communication? What are the various models of communication? 16

Section D

7. Elucidate the conceptual emergence of community psychology. What are the approaches to study it? 16
8. Write notes on the following:
a) Sense of community on the internet
b) Change in community 8+8=16

Exam Code: 910204
(30)

Paper Code: 4158

Programme: Master of Arts (Psychology)
Semester-IV

Course Title: Health Psychology

Course Code: MSYL- 4443 (OPT-III) ✓

Time Allowed: 3 Hours

Max Marks: 80

Candidates are required to attempt five questions in all, selecting at least one question from each section. The fifth question may be attempted from any section. Each questions carries 16 marks.

Section-I

1. Discuss historical and recent development in the field of health psychology. 16
2. Critically evaluate Bio-psychosocial model of health. 16

Section-II

3. Outline the major types of stress and its effect on human behaviour. 8,8
4. Define the term coping. Discuss its nature and its influence on our daily functioning. 4,6,6

Section-III

5. Explain the role of stress in cardiovascular diseases. 16
6. Briefly describe the following:-
- (i) Diabetes
 - (ii) Smoking 8,8

Section-IV

7. What is PMR? How is it used to manage stress? 4,12
8. Delineate the role of nutrition and physical exercise in the management of stress. 16

Exam Code: 910204
(30)

Paper Code: 4159

Programme: Master of Arts (Psychology)
Semester-IV

Course Title: Positive Psychology

Course Code: MSYL-4444 (OPT-IV) ✓

Time Allowed: 3 Hours

Max Marks: 80

Note: Attempt five questions out of eight, It is compulsory to attempt at least one question from each section. The fifth question can be done from any section. All the question carry equal marks. Each question carries 16 marks.

Section-A

1. Discuss the nature of Positive Psychology. (16)
2. Write a note on the VIA Classification of strength. (16)

Section B

3. Discuss the effect of positive emotion on physical health, psychological and social resources. (16)

4. Explain the determinants of subjective well-being and strategies for enhancing happiness. (16)

Section C

5. Explain the mindfulness technique and its benefits. (16)
6. What is flow in positive psychology? How to reach and maintain an immersed flow state. (16)

Section D

7. Explain the concept and benefits of Forgiveness. (16)
8. Discuss Keys model and four front approach of mental health. (16)

Exam Code: 910204
(30)

Paper Code: 4160

Programme: Master of Arts (Psychology)
Semester-IV

Course Title: Developmental Psychopathology

Course Code: MSYL-4445 (OPT-VI) ✓

Time Allowed: 3 Hours

Max Marks: 80

Note: Attempt five questions out of eight, It is compulsory to attempt at least one question from each section. The fifth question can be done from any section. All the question carry equal marks. Each question carries 16 marks.

Section-A

1. Write a detailed note on the nature and scope of developmental psychopathology with principles. (16)
2. Explain the classification and assessment in the field of developmental psychopathology. (16)

Section B

3. Define internalizing Disorder with detail description of conversion reaction. (16)
4. What do you mean by Enuresis disorder in children and what are the treatment advised for this? (16)

Section C

5. What is Externalizing disorders? Discuss Attention Deficit hyperactivity disorder in detail. (16)
6. Write a detailed note on Oppositional defiant disorder with its causes and its treatment. (16)

Section D

7. Write a note on childhood onset schizophrenia. (16)
8. What do you mean by Tic disorder? Write down its causes and types in detail. (16)

Exam Code: 211204
(30)

Paper Code: 4232

Programme: Master of Science (Zoology)
Semester-IV

Course Title: Animal Behavior and Wildlife Conservation

Course Code: MZOL-4481 ✓

Time Allowed: 3 Hours

Max Marks: 80

Note: Attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section. Each question carries 16 marks.

Section A

1. (a) Why do animals communicate? 6
(b) What are the techniques used for investigating the role of nervous system in behavior? 10
2. (a) Write a note on evolution of language in primates. 4
(b) Explain with the help of various experimental methods that demonstrate the influence of genes on behavior. 12

Section- B

3. (a) Write short notes on Reciprocal altruism and Conditioning in animals. 4
(b) Define reproductive strategies. Discuss in detail the intricacies of courtship behaviour in birds. 12
4. (a) What is Group Living? Give some examples of aggregations in animals. 6
(b) Explain with examples, parental care in animals. 10

Section- C

5. (a) How do you define Wildlife? Discuss its values. 4
(b) Give the distribution of wildlife in India. 6
(c) Write a note on Red Data Book. 6
6. (a) What are the methods for studying the wild life populations? 8
(b) What the major reasons for Wildlife depletion? 8

Section- D

7. Give the details of Project Rhino. 16
8. (a) Give the ecology and conservation of Manipur Brow Antlered Deer. 10
(b) Write down the status of wildlife in Punjab. 6

Exam Code: 211204
(30)

Paper Code: 4233

Programme: Master of Science (Zoology)
Semester-IV

Course Title: Animal Genetics and Biotechnology

Course Code: MZOL-4482 ✓

Time Allowed: 3 Hours

Max Marks: 80

Note: Attempt five questions in all, selecting one question from each section (A to D). Fifth question can be attempted from any section. Each question carries equal (16) marks. Draw diagrams wherever necessary.

Section-A

1. Discuss various chromosomal banding patterns. 16
2. What is somatic cell hybridization? Illustrate with an example. 16

Section B

3. Give complementation test for functional allelism. 16
4. Define and classify mutations with suitable examples. 16

Section C

5. DNA sequence can change its relative position within the genome of a single cell. Justify the statement with the help of suitable examples. 16
6. Give various stages of life cycle of a typical phage. 16

Section D

7. Discuss in detail what you understand by sex linked inheritance. 16
8. Write a note on Following
 - a. Restriction endonucleases 8
 - b cDNA cloning 8

Exam Code: 211204
(30)

Paper Code: 4234

Programme: Master of Science (Zoology)
Semester-IV

Course Title: Concepts Of Immunology

Course Code: MZOL-4483 ✓

Time Allowed: 3 Hours

Max Marks: 80

Note: Candidates are required to attempt 5 questions each carrying 16 marks selecting at least one question from each section. The 5th question can be attempted from any section.

Section A

1. Give detailed account on innate immunity. 16
2. (a) What are primary lymphoid organs? Discuss in detail.
(b) Write a note on MALT. (10+6)

Section B

3. Discuss the following
a) Affinity and avidity
b) Antibody diversity (8+8)
4. Discuss the structure of MHC and its role in antigen presentation with the help of suitable diagrams. 16

Section C

5. Explain Type 1 hypersensitivity in detail. 16
6. What are monoclonal antibodies. Write a detailed note on their applications. 16

Section D

7. Discuss the following-
 - (a) ELISA
 - (b) Agglutination (10+6)
8. Write a detailed note on various immunodiagnosics techniques. 16

Exam Code: 211204
(30)

Paper Code: 4235

Programme: Master of Science (Zoology)
Semester-IV

Course Title: Biosystematics

Course Code: MZOL-4484 ✓

Time Allowed: 3 Hours

Max Marks: 40

Attempt five questions in all. Select at least one question from each section (A to D) respectively. Fifth question may be attempted from any section (A-D). Write legibly and draw well labeled diagrams wherever necessary.

Section-A

1. Explain the theories of biological Classification and their history. Give their relevance in the field of taxonomy.
(8)
2. (a) State and explain the new aspects of biosystematics along with their application.
(b) What is Cytotaxonomy and Molecular taxonomy? Give their utility as taxonomical tools. (4+4)

Section-B

3. Briefly explain the following:
(a) international code of Zoological Nomenclature

- (b) Procedure for Taxonomical Collection (4+4)
4. Explain the various kinds of taxonomical keys along with their features. Discuss their merits and demerits. (8)

Section-C

5. What are taxonomical publications? Give their types and contents of publications. (8)
6. Write short notes on:
- (a) Lower and Higher Categories
- (b) Species Concept (4+4)

Section-D

7. (a) Describe the whittaker's Criteria for classification and discuss the salient features of kingdom system proposed by him.
- (b) Give the concept and significance of minor phyla. (4+4)
8. Give an outline classification of kingdom Animalia. (8)