AH4KPOE639 Reg. No.: | | | | | | | | |

St Aloysius (Deemed to be University)

Mangaluru

SCHOOL OF LANGUAGES AND CULTURAL STUDIES

(PG Programme)

Semester III –P.G. Examination

October/November - 2025

OPEN ELECTIVE (Under CBCS)

INTERPRETING LITERATURE

Time: $2^1/_2$ Hours **Max Marks: 60**

UNIT-I

I. Answer any ONE of the following: **(1x12=12)**

1. Evaluate "An Introduction" as a confessional poem. To what extent does Kamala Das merge the personal with the universal in her exploration of womanhood?
2. Discuss the theme of disillusionment with war as presented in the poem "Dulce et Decorum Est"
3. "The Journey of the Magi is not just a physical journey, but a profound spiritual and emotional struggle". Discuss with reference to the poem "The Journey of the Magi".

UNIT-II

II. Answer any ONE of the following: **(1x12=12)**

4. Explain the significance of the title "Arms and the Man" in relation to the themes of the play?
5. What is the setting of the play "Arms and the Man", and how does it influence the events that unfold?
6. Critically analyze Shaw's treatment of class distinctions in the play, with reference to characters like Louka, Nicola, and the Petkoffs.

UNIT-III

III. Answer any ONE of the following: **(1x12=12)**

7. Analyze the character of Grandmother Field as portrayed in the essay "Dream Children".
8. Discuss how Chesterton transforms trivial inconveniences into sources of joy in "On Running after one's Hat."
9. How does Lamb use the dream motif in "Dream Children" to explore his emotions and regrets?

UNIT-IV

IV. Answer any ONE of the following: **(1x12=12)**

10. Who are Swami's closest friends, and how do they influence him throughout the story?

Contd...2

11. Evaluate the role of humor and irony in *Swami and Friends*. How does it enhance the storytelling?
12. Discuss the role of colonialism *Swami and Friends*. How do the characters perceive the British presence in India?

UNIT-V

V. Write short notes on any <u>TWO</u> of the following: **(2x6=12)**

13. The Paradox of Birth and Death in "The Journey of the Magi"
14. Swami's experience during the protest against the British.
15. Imagery and Symbolism in the Poem "The Shield of Achilles"
16. Chesterton's Use of Humor in "On Running after one's Hat"

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AH4LPOE639 Reg. No.: | | | | | | | | |

St Aloysius (Deemed to be University)

Mangaluru

School of Arts and Humanities

(PG Programme)

Semester III –PG Examination

October/November - 2025

Open Elective Under (CBCS)

Contemporary Indian Economy

Time: $2^1/_2$ Hours **Max Marks: 60**

SECTION – A

Answer any SIX of the following. **(6x5=30)**

1. Discuss a recent policy initiative that made you reconsider your understanding of inclusive growth.
2. Critically evaluate innovative employment guarantee intervention for urban informal workers.
3. "Human resource is both an asset and a liability". Explain with examples from India
4. Evaluate the role of the Public Distribution System (PDS) in ensuring household food security.
5. Propose one modification to the exit policy that could reduce industrial disputes.
6. Assess the role of financial institutions in the rehabilitation of sick units.
7. Analyse the impact of fiscal decentralisation on local governance in India.
8. Examine the sectoral distribution of FDI in India and its implications for balanced regional development.

SECTION - B

Answer any THREE of the following. **(3x10=30)**

9. Design a policy framework to convert India's demographic dividend into sustainable economic growth over the next 20 years.
10. Critically evaluate the interplay between economic growth, poverty reduction, and income inequality in the Indian context.
11. Forecast the long-term socio-economic implications of climate change on Indian agriculture.
12. Assess the long-term structural factors contributing to India's recurring BoP pressures.
13. Assess the impact of GST implementation on India's informal sector.

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AH4NPOE639 Reg. No.: | | | | | | | | |

St Aloysius (Deemed to be University)

Mangaluru

School of Arts and Humanities (PG Programme)

Semester III – P.G. Examination

October/November - 2025

OPEN ELECTIVE (Under CBCS)

FILM APPRECIATION

Time: $2^1/_2$ Hours **Max Marks: 60**

SECTION – A

Answer any SIX of the following: **(6x5=30)**

1. Story Arc
2. OTT
3. Camera angles
4. Audience Cultural Context
5. Sound in Cinema
6. Script Supervisor
7. Handheld camera
8. Objective Critique

SECTION - B

Answer any THREE of the following: **(10x3=30)**

9. Compare the visual storytelling techniques used in Jurassic Park and Blair Witch Project.
10. Critically assess how cultural context influences the type of humor presented in comedy films and its reception by different audiences.
11. Describe the basics of cinematography and how camera movement influences storytelling.
12. Compare and contrast the mise en scene in Murder on the Orient Express and Psycho in creating atmosphere.
13. Describe the various types of documentary and analyze how the choice of type influences the storytelling approach and audience perception.

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St Aloysius (Deemed to be University)
Mangaluru

School of Arts and Humanities
(PG Programme)

Semester III – P.G. Examination

October/November 2025

OPEN ELECTIVE (UNDER CBCS)

HUMAN RIGHTS AND SOCIAL DEFENCE

Time: $2^1/_2$ Hours **Max Marks: 60**

SECTION – A

Answer any SIX of the following. **(6x5=30)**

1. Explain the concept of human rights.
2. Discuss briefly the economic rights given in Universal Declaration of Human Rights 1948.
3. Trace the history of human rights in India.
4. Examine the human rights violations on Dalits.
5. Write brief note on 'Consumer Redressal Forum'.
6. Highlight the contributions of Amnesty International in protecting human rights at the global level.
7. Discuss the role of child line in safeguarding child rights.
8. Highlight the features of Juvenile Justice System in India.

SECTION - B

Answer any THREE of the following. **(10x3=30)**

9. Elaborate the rights in enshrined in United Nations Convention on the Rights of the Children.
10. Explain the fundamental rights in Indian Constitution.
11. Examine the various human rights violations on women.
12. Analyze the role of media in protecting human rights.
13. Discuss the child friendly measures provided in POCSO 2012.

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AH4PPOE639 Reg. No.: | | | | | | | | |

St Aloysius (Deemed to be University)

Mangaluru

School of Arts and Humanities

(PG Programme)

Semester III-PG Examination

October/November- 2025

Open Elective(Under CBCS)

Basic counselling Skills

Time: $2^1/_2$ Hours **Max Marks: 60**

SECTION – A

Answer any SIX of the following. **(6x5=30)**

1. Explain the levels of consciousness proposed in the psychoanalytical theory.
2. Elaborate on the types of beliefs people have according to REBT with examples.
3. Discuss the process involved in accurate responses that are given by the counsellor.
4. Discuss the common mistakes made in questioning that can affect the course of counselling.
5. Elaborate on the various self-doubts and fears beginning counsellors can have.
6. Give examples of different Counter transference a counsellor can show.
7. Describe the ways how summarizing skills are used during counseling.
8. Describe the meaning and importance of unconditional positive regard?

SECTION - B

Answer any THREE of the following. **(3x10=30)**

9. Elucidate the ethical principles given by APA for counsellors along with the ethical issues that counsellor has to deal with in counselling.
10. Elaborate on imposing values and resolving value conflicts in counselling session with examples.
11. Discuss the reasons for inadequate listening and elaborate on the need for active listening in counselling.
12. Explain initial disclosure and in depth exploration stages of counseling.
13. Give examples for different forms of transference and ways of dealing with them.
14. Describe the various types of challenging clients with examples.

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CF5FPOE639 Reg. No.: | | | | | | | | |

St Aloysius (Deemed to be University)

Mangaluru

School of Commerce, Finance and Accountancy

(PG Programme)

Semester III – P.G Examination

October/November - 2025

OPEN ELECTIVE (UNDER CBCS)

ENTREPRENEURIAL DEVELOPMENT

Time: $2^1/_2$ Hours **Max Marks: 60**

SECTION – A

Answer any FIVE of the following. **(5x2=10)**

1. What are the key differences between an entrepreneur and a manager?
2. What do you understand by promotion of social entrepreneurs?
3. Explain why social entrepreneurship is different from traditional business entrepreneurship
4. Suppose you want to start a food delivery startup in your city. Identify one challenge you might face and suggest a solution to overcome the challenge.
5. How do IPRs help in protecting innovation?
6. Mention any two functions of Human Resource Management.

SECTION - B

Answer any FOUR of the following. **(4x5=20)**

7. Explain the different types of entrepreneurs.
8. My Space was one of the first popular social networking sites. But it failed to innovate and lost users to Facebook. The platform became outdated, and its popularity dropped quickly. From being the top social site, MySpace became almost irrelevant. It needed a creative revival to regain its user base. Suggest a revival strategy for MySpace.
9. Evaluate the role of government and financial institutions in supporting small and medium enterprises (SMEs). Provide arguments with examples.
10. Evaluate whether the social environment has a greater impact on business success than the technological environment. Give reasons for your answer.
11. Suppose your college is organizing an EDP for students. Suggest the key topics or training methods that should be included and explain why.

SECTION – C

Answer any THREE of the following. **(3x10=30)**

12. Analyze the major socio-cultural barriers faced by women entrepreneurs in India and suggest possible solutions.
13. Evaluate whether the company form of ownership is always better than sole proprietorship in today's business environment. Give arguments with examples.
14. Social entrepreneurs suffer due to lack of Support from Government. Explain
15. Explain the 7 P's of Marketing in Developing an effective marketing strategy.

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LS2GPOE639 Reg. No.: | | | | | | | | |

St Aloysius (Deemed to be University)

Mangaluru

School of Life Sciences (PG Programme)

Semester III – P.G. Examination

October/November - 2025

OPEN ELECTIVE (UNDER CBCS)

CLINICAL DRUG DEVELOPMENT AND IPR

Time: $2^1/_2$ Hours **Max Marks: 60**

Note: Draw neat, labelled diagrams /schematic sketches/structures wherever necessary

SECTION – A

Write Short note on any FIVE of the following. **(5x2=10)**

1. Define pharmacokinetics and its importance in drug development.
2. Evaluate the role of agonists and antagonists in pharmacodynamics.
3. Define Good Clinical Practices (GCP) in clinical research.
4. Name any two historical milestones in the development of regulations for clinical research.
5. Discuss on intellectual property rights.
6. Illustrate the economic and social benefits of patent protection in India.

SECTION - B

Write Explanatory notes on any SIX of the following. **(6x5=30)**

7. Analyze the role of GLP in ensuring data integrity and preventing fraud in preclinical research.
8. Examine the challenges and methodologies involved in assessing genotoxicity and carcinogenicity in toxicology studies.
9. Explain the role of Ethics Committees and IRBs in the review and approval of clinical research protocols.
10. Explain the components of an Informed Consent Form (ICF).
11. Explain the key steps involved in filing a patent application.
12. Analyze the role of PCT applications in protecting biotechnological inventions on a global scale.

13. Explain the process of initiating a patent revocation in India.

SECTION – C

Answer any TWO of the following. **(2x10=20)**

14. Discuss the specific guidelines and requirements outlined by CCSEA for animal welfare in research.
15. Create an Investigator's Brochure (IB) for a hypothetical clinical trial, including essential sections and content.
16. Discuss the historical development of the US patent system and its evolution over time.

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(2024 Batch Onwards)

LS2HPOE639 Reg. No.: | | | | | | | | |

St Aloysius (Deemed to be University)

Mangaluru

School of Life Sciences (PG Programme)

Semester III – PG Examination

October/November - 2025

OPEN ELECTIVE (Under CBCS)

EVOLUTION AND ECOLOGY

Time: $2^1/_2$ Hours **Max Marks: 60**

Note: Draw neat, labelled diagrams /schematic sketeches/structures wherever necessary

SECTION – A

Write Short note on any FIVE of the following. **(5x2=10)**

1. Define speciation in the context of evolution.
2. What is sexual selection with example?
3. What are some potential threats to endemic species?
4. What is mutualism in inter-species interactions? Provide a brief example of mutualism in the natural world.
5. Give the important characteristics of Tundra Biome.
6. What is the niche concept in ecology?

SECTION - B

Write Explanatory notes on any SIX of the following. **(6x5=30)**

7. Analyze misconceptions related to evolution.
8. Analyze the experiments conducted to disprove lamarkism.
9. Discuss the concept of succession in a community ecosystem. Differentiate between primary and secondary succession, and provide an example of each.
10. Explain the concept of trophic levels in ecosystem. Provide an example of a terrestrial or aquatic ecosystem and describe the typical organisms found at each trophic level.
11. A female bird can protect her nest, containing four nephews, from a predator. By doing so, she reduces her own chance of survival by 10% (C = 0.1). The relatedness between her and each nephew is 0.25 (r = 0.25). Protecting the nest increases each nephew's chance of survival by 40% (B = 0.4). According to Hamilton's rule, should the bird protect the nest?
12. Describe zonation in marine ecosystem with a diagram.
13. Discuss the concept of commensalism and provide a detailed example. Analyze how one species benefits and the other is neither significantly harmed nor helped.

SECTION – C

Answer any TWO of the following. **(2x10=20)**

14. Analyze Darwin's theory of evolution with example.
15. Evaluate the impact of altruistic behavior in the context of kin selection and inclusive fitness theory in behavioral ecology.
16. Define the term "biodiversity" and describe its significance in natural resource conservation. Provide three major threats to biodiversity, and briefly explain.

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LS2JPOE639

Reg. No. | | | | | | | | |

ST ALOYSIUS (DEEMED TO BE UNIVERSITY)
MANGALURU
SCHOOL OF LIFE SCIENCES
(PG PROGRAMME)
Semester III – P.G. Examination
October/ November - 2025
Open Elective (Under CBCS)
Health and Fitness

Time: 2 ½ hrs. **Max Marks: 60**

Note: Draw neat labelled diagrams/schematic sketches/structures wherever necessary.

I. Write short notes on any FIVE of the following. **(5x2=10)**

1. Define food habits.
2. Define nutritional status.
3. Explain the role of the aerobic energy system in long-duration exercises.
4. What is the importance of protein for muscle repair and growth?
5. Define sports-specific dietary manipulation.
6. List the factors that may contribute to a person's decision to use commercial supplements.

II. Write explanatory notes on any SIX of the following: **(6x5=30)**

7. Explain how socioeconomic status (SES) affects an individual's access to healthcare and overall wellness.
8. Explain the relationship between vitamin D and calcium absorption in the context of bone health.
9. Discuss how the body switches between carbohydrate and fat metabolism during moderate to long-duration exercise.
10. Evaluate the nutritional requirements for an athlete preparing for a high-intensity competition.
11. Evaluate the pros and cons of using creatine supplementation for a weightlifter.
12. Develop a checklist that a coach or nutritionist can use to assess the effectiveness of a pre-game nutrition plan.
13. Explain the role of carbohydrates in aerobic and anaerobic metabolic pathways.

III. Answer any TWO of the following: **(2 x10=20)**

14. Develop a comprehensive wellness program that integrates nutrition, physical activity, stress management, and diabetes education for a newly diagnosed diabetic patient.
15. Analyze the role of macronutrients in different types of exercise.
16. Analyze the nutritional challenges faced by astronauts during space missions. What specific dietary strategies are implemented to maintain health and performance in a microgravity environment?

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LS2IPOE639 Reg. No. | | | | | | | | |

ST ALOYSIUS (DEEMED TO BE UNIVERSITY)
MANGALURU
SCHOOL OF LIFE SCIENCES
(PG PROGRAMME)
Semester III – P.G. Examination
October/ November - 2025
Open Elective (Under CBCS)
Basics of Food Safety and Labelling

Time: 2 ½ hrs. **Max Marks: 60**

Note: Draw neat labelled diagrams/schematic sketches/structures wherever necessary.

I. Write short notes on any FIVE of the following. (5x2=10)

1. Recall the importance of traceability in food quality assurance.
2. Differentiate between food safety and food quality.
3. Define Good Agricultural Practices (GAP) and briefly explain its primary objective in the food industry.
4. Define Danger zone temperature. What is its role in food safety.
5. Define Principal Display Panel in Food labels
6. Write on the concept of "use by" and "best-before" dates on food products.

II. Write explanatory notes on any SIX of the following: (6x5=30)

7. Explain the importance, principles and functions of Food Quality Assurance
8. Explain the role of technology, such as barcoding, RFID and block chain in food traceability.
9. What are allergens? Explain the importance of allergen labelling in food labels.
10. Explain the types of food adulteration with suitable examples.
11. How do Good Manufacturing Practices (GMP) help in ensuring product consistency and safety in food manufacturing?
12. What are the seven principles of HACCP, and how do they provide a structured framework for ensuring food safety?
13. Describe the organizational structure of FSSAI. How does FSSAI handle food recalls and withdrawals in cases of unsafe or adulterated food products? What are the procedures and responsibilities involved?

III. Answer any TWO of the following: (2 x10=20)

14. Explain the importance of food safety in food processing industry.
15. Compare and contrast GAP and GMP as quality management approaches in the food industry.
16. What is Food labelling? Explain the guidelines and regulations of food labelling

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PS1FPOE639 Reg. No.: | | | | | | | | |

St Aloysius (Deemed to be University)

Mangaluru

School of Physical Sciences (PG Programme)

Semester III – P.G. Examination

October/November - 2025

OPEN ELECTIVE (UNDER CBCS)

EXPERIMENTAL TECHNIQUES

Time: 2 ½Hours **Max Marks: 60**

SECTION – A

Answer any FIVE of the following. **(5x2=10)**

1. Discuss phase matching in brief.
2. Write a note on the vacuum spectrum.
3. Write a note on magnetic lenses.
4. Explain the principle ionization gauge.
5. Discuss electron probe micro analysis technique.
6. Discuss the applications of TEM.

SECTION - B

Answer any FIVE of the following. **(10x5=50)**

7. How Z scan technique is useful in the study of nonlinear optical properties of materials. Explain.
8. What is Q switching and electro-optic effect in laser? Explain in detail.
9. With neat diagram describe the construction and working of rotary vane pump.
10. How vacuum is created using cryopump? Explain.
11. Explain principle, construction and working of SEM.
12. With neat diagram explain principle of atomic force microscopy.
13. Explain in detail the properties of the laser.
14. Discuss in detail the construction and working of a Nd YAG laser with the energy level diagram.

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PS1GPOE639 Reg. No.: | | | | | | | | |

St Aloysius (Deemed to be University)

Mangaluru

School of Physical Sciences (PG Programme)

Semester III – PG Examination

OPEN ELECTIVE (Under CBCS)

October/November - 2025

BIO-INORGANIC CHEMISTRY, GREEN CHEMISTRY AND ENVIRONMENTAL CHEMISTRY

Time: $2^1/_2$ Hours **Max Marks: 60**

SECTION – A

Answer any FIVE of the following. **(5x2=10)**

1. How many sodium ions are transported out of the cell and how many potassium ions are transported into the cell per cycle of the sodium-potassium pump?
2. What is the name of the metal ion that is coordinated by a porphyrin ring in the heme group of myoglobin and hemoglobin?
3. Mention any two uses of metal ions in medicine.
4. List the categories of Microwave assisted reactions.
5. Describe the goal of green chemistry.
6. What is phase transfer catalyst? Give an example.
7. Mention the control measures for NO_x.
8. Define eutrophication?

SECTION - B

Answer any TEN of the following. **(10x5=50)**

9. Describe the structure and function of hemerythrin in some marine invertebrates.
10. What is the significance of copper ions in cellular respiration and antioxidant defense?
11. Explain biological nitrogen fixation.
12. How do these metal storage and transport proteins contribute to overall human health?
13. Analyze the economic benefits and drawbacks of adopting green chemistry practices in the pharmaceutical industry compared to traditional approaches.
14. It is better to prevent waste than to treat or clean up waste once it is formed. Justify.
15. Compare and contrast reactions on solid mineral supports with solution-phase reactions. What are the advantages and limitations of each approach?
16. Write a note on zero technology.
17. Describe the biochemical effects of lead and Arsenic.
18. Evaluate the role of enzymes as biomarkers in environmental toxicology. Explain how changes in enzyme activity can serve as indicators of environmental contamination and toxicity levels.
19. Describe photochemical smog.
20. Describe the steps involved in domestic waste water treatment.

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PS1HPOE639 Reg. No.: | | | | | | | | |

St Aloysius (Deemed to be University)

Mangaluru

School of Physical Sciences (PG Programme)

Semester III – PG Examination

OPEN ELECTIVE (Under CBCS)

October/November - 2025

INSTRUMENTAL METHODS OF ANALYSIS

Time: $2^1/_2$ Hours **Max Marks: 60**

SECTION – A

Answer any FIVE of the following. **(5x2=10)**

1. Give the characteristic absorption frequency of N-H bond in primary amines.
2. What are Auxochromes? Give an example.
3. Give any two applications of UV-Visible spectroscopy in Pharmaceutical analysis.
4. What is meant by GC-MS?
5. Mention any two differences between molecular ion peak and base peak?
6. Name any two types of detectors used in HPLC.
7. What is the fundamental principle behind nephelometry and turbidimetry?
8. What are the advantages and disadvantages of using optical rotation measurements versus Circular Dichroism (CD) spectroscopy for characterizing chiral compounds?

SECTION - B

Answer any TEN of the following. **(10x5=50)**

9. Using suitable examples for each, differentiate between an aliphatic and aromatic alcohol, using IR spectroscopic technique.
10. Differentiate the IR spectrums of Benzene and Toluene.
11. Calculate the wave number of stretching vibration of C-C bond.
    Given: Force constant, $k=5\times10^5$ dynes cm^{-1}.
12. Discuss the concept of hypsochromic and bathochromic shifts in UV spectrometry, and how substituents influence these shifts.
13. Describe the principle & basic theory of chromatography.
14. Discuss the fragmentation behavior of ketones, giving an example spectrum.
15. Discuss pharmaceutical and environmental applications of HPLC.
16. Write a note on the Rate Theory of chromatography.
17. Given a solution containing small size suspended particles compared to wave length, explain the experimental set you will use and why?
18. Discuss the significance of using a monochromatic light source in a polarimeter for precise optical rotation measurements.
19. Explain the working principle of a polarimeter, including how it measures the optical rotation of a substance. Provide a diagram if necessary.
20. Design an experimental setup for a turbidimetric titration to determine the concentration of a suspended analyte in a sample.

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(2024 - Batch onwards)

PS1IPOE639 Reg No :

St Aloysius (Deemed to be University)
Mangaluru
School of Physical Sciences (PG Programme)
Semester III - PG Examination
October / November - 2025
Open Elective (Under CBCS)
Differential Equations and Applications

Time : 2½ Hours **Max. Marks : 60**

SECTION - A

Answer any FIVE of the following. **(5x2=10)**

1. Solve : $\frac{dy}{dx} + \frac{y}{x} = x^3 - 3$.
2. Solve : $\frac{dy}{dx} = 1 + \tan(y - x)$.
3. Solve : $(D^2 + 4)y = \cos 2x$.
4. Solve : $\frac{d^2y}{dx^2} + 4\frac{dy}{dx} + 5y = 0$.
5. Form a PDE by elimination of arbitarary function f from $z = f(x^2 + y^2)$.
6. Find the particular integral of $(D^2 - 3DD' + 2D'^2)z = e^{2x-y}$.

SECTION - B

Answer any FIVE of the following. **(5x10=50)**

7. a) An inductance of $2\ H$ and a resistance of $20\ \Omega$ are connected in series with an emf E volts. If the current is zero when $t = 0$, find the current at the end of 0.01 seconds if $E = 100v$.
   b) A certain radioactive substance has an initial mass of $120\ kg$. After 6 hours, the mass has reduced to $60\ g$. Find the decay constant k and determine the mass after 10 hours.

   (5+5)

8. Reduce the following into a linear differential equation and hence solve:
   a) $x\frac{dy}{dx} + y\log y = xye^x$.

   b) $\frac{dy}{dx} - \frac{\tan y}{1+x} = (1 + x)e^x \sec y$. **(5+5)**

9. Solve the following homogeneous equations:
   a) $\left(x\cos(\frac{y}{x}) + y\sin(\frac{y}{x})\right)y\,dx - \left(y\sin(\frac{y}{x}) - x\cos(\frac{y}{x})\right)x\,dy = 0$.

   b) $\frac{dy}{dx} = \frac{y+\sqrt{x^2+y^2}}{x}$ **(5+5)**

10. Obtain the general solution of the differential equation: $y'' - 2y' + 2y = x + e^x \cos x$.
11. A body executes damped forced vibrations given by the equation: $\frac{d^2x}{dt^2} + 2k\frac{dx}{dt} + b^2x = e^{-kt}\sin(\omega t)$. Solve the differential equation for both cases when $\omega^2 \neq b^2 - k^2$ and when $\omega^2 = b^2 - k^2$, $k^2 < b^2$.
12. a) Solve the partial differential equation: $(D^3 - 3D^2D' + 4D'^3)z = \sin(x + 3y)$.
    b) Solve Lagrange's linear PDE: $y^2p - xyq = x(z - 2y)$. **(5+5)**
13. a) Solve the following non homogenous PDE: $r - t + p - q = 0$.
    b) Solve $(D^2 + DD' - 6D'^2)z = ycosx$. **(5+5)**
14. Solve the partial differential equation
    a)$(D^2 - DD')z = sinx\ cos2y$
    b)$(D^2 + DD' - 6D'^2)z = x + y$ **(5+5)**

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