UNIT I

1. (a) Let $G$ be a group and let $C_{G}(G)$ be the centralizer of $G$ in $G$. Prove that any two composition series of $G$ are equivalent. (b) Prove that if $G$ is a group of order $p^2$ where $p$ is a prime, then $G$ is a cyclic group.

UNIT II

1. (a) If $F$ is a finite extension of a field $E$, prove that the multiplicative group of nonzero elements of $F$ has a root of $x^n - 1$ in $F$, where $n$ is the degree of $F$ over $E$.

(b) Prove that $F$ is a finite extension of $E$ if and only if $F$ is a finite extension field of $E$.

(c) Prove that if $F$ is a finite extension of $E$, then $F$ is a finite extension field of $E$.

(d) Prove that if $F$ is a finite extension of $E$, then $F$ is a finite extension field of $E$.

Note: Attempt five questions in all. Section one question.

MDE/M-22

PAPER-I

ADVANCED ABSTRACT ALGEBRA

4012

Roll No: 

Total Pages: 3
that $J$ is nilpotent.

(b) If $J$ is a nil ideal of an arbitrary ring $R$, prove

Show and prove Schur's Lemma.

(c) Construct $N$.

Proof that $J$ is a nilpotent module.

UNIT-IV

Divisors.

In $\mathbb{N}^+$, if and only if they have the same element.

Prove that the elements $S$ and $T$ in $\mathbb{N}^+$ are similar,

are not similar.

\[
\begin{bmatrix}
0 & 0 & 0 & 0 \\
1 & 0 & 0 & 0 \\
0 & 1 & 0 & 0 \\
0 & 0 & 1 & 0 \\
\end{bmatrix}
\]

and

\[
\begin{bmatrix}
0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 \\
0 & 1 & 0 & 0 \\
0 & 0 & 1 & 0 \\
\end{bmatrix}
\]

UNIT-III

and compare.

Show that if $J$ is possible to construct $72^2$ using other

Prove that two nilpotent linear transformations are similar.

(b) Show that it is possible to construct $72^2$ using other

By radicals over $\mathbb{C}$.

(c) Show that the polynomial $x^2 - 2x - 5$ is not solvable.

(b) Find the Abelian group generated by $\langle x^3, x^2 \rangle$.

Also find the rank.

Also find \( \begin{bmatrix} 4 & 2-x & -x \end{bmatrix} \).

Find invariant factors of the matrix:

10. (a) Find $N$ is nilpotent.

(b) Let $N$ be a nil ideal in a projective ring $R$. Prove
\[
\frac{e^{x^n + 1}}{x} = (x)^{e^x}
\]

2. (a) For \( n = 1, 2, 3 \), find the limit of \( F(x) \).

2

(b) \( F \) is continuous at every point of \( [a, b] \), then \( F \) is differentiable at every point of \( [a, b] \).

(b) \( F \) is continuous on \( [a, b] \). Furthermore, \( F \) is differentiable on \( [a, b] \).

Then \( F \) is continuous on \( [a, b] \).

(b) \( F \) is continuous on \( [a, b] \).

8

4. (a) Prove that the function \( F \) which is continuous on \( [a, b] \).

UNIT-I

Question from each unit

Note: Attempt five questions in all, selecting at least one

Maximum Marks : 80

Time Allowed : 3 Hours

Paper - M-402

REAL ANALYSIS

4013

MDE/M-42
UNIT III

8. Suppose \( f \) is an open subset of \( \mathbb{R} \) and the mapping \( \{ x \in \mathbb{R} \mid a < x < b \} \) is continuous on \( \mathbb{R} \). This mapping is

Then

\[
\lim_{x \to a^+} f(x) = L
\]

and the real line which is nowhere differentiable.

8. Prove that there exists a real continuous function on

is correct if \( x \neq 0 \), but false if \( x = 0 \).

\[
\lim_{x \to 0} f(x) = L
\]

and that the equation

Show that \{ \( a \} \) converges uniformly to a function \( f \).
8. Let $f$ be an increasing real-valued function defined on

UNIT IV

\[ a^n \int_{\infty}^{\infty} f(x) \, dx = \int_{\infty}^{\infty} f(x) \, dx \]

functions, and let $\sum_{n=1}^{\infty} a_n$. Then

3. Let \( \{a_n\}_{n=1}^{\infty} \) be a sequence of non-negative measurable

7. (a) State and prove bounded convergence theorem.
8. (b) Let \( f \) be a real valued function on a set \( E \). Then
8. \[ \lim_{n \to \infty} \int_{a}^{b} f(x) \, dx = \int_{a}^{b} \left( \lim_{n \to \infty} f_n(x) \right) \, dx \]

10. Let \( a \) and \( b \) be non-negative extended real numbers such

9. \( f \) is measurable implies \( f \) is measurable

8. \( f \) is an absolutely continuous function, then it has

1. Let \( A \) and \( B \) be non-zero constants \( A \) and \( B \), we have \( A \cdot B = |A| \cdot |B| \). Equality holds if and only if \( A \) and 

Equality holds if and only if 

\[ b \geq \| d \| \geq \| a \| \geq \| c \| \geq \| a \| \geq \| b \| \geq \| c \| \]

9. A function \( f \) defined on \( a, b \) is of bounded variation

Furthermore, \( f \) is differentiable a.e. and the derivative \( f' \) is

8. Let \( f \) be an increasing real-valued function defined on

UNIT IV

\[ a^n \int_{\infty}^{\infty} f(x) \, dx = \int_{\infty}^{\infty} f(x) \, dx \]

functions, and let $\sum_{n=1}^{\infty} a_n$. Then

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Equality holds if and only if 

\[ b \geq \| d \| \geq \| a \| \geq \| c \| \geq \| a \| \geq \| b \| \geq \| c \| \]

9. A function \( f \) defined on \( a, b \) is of bounded variation

Furthermore, \( f \) is differentiable a.e. and the derivative \( f' \) is
1. (a) Define Lindelöf spaces. State and prove Lindelöf

2. (b) Hereditary property:

Show that the property of being Lindelöf space is

(a) base for some topology for \( X \)

(b) if \( \forall \mathcal{A} \subseteq X \), then \( X \subseteq \mathcal{D} \cap \mathcal{A} \cap \mathcal{B} \subseteq \mathcal{D} \cap \mathcal{A} \cap \mathcal{B} \).

(c) If \( \forall \mathcal{A} \subseteq X \), then \( X \subseteq \mathcal{D} \cap \mathcal{A} \cap \mathcal{B} \subseteq \mathcal{D} \cap \mathcal{A} \cap \mathcal{B} \).

(d) If \( \forall \mathcal{A} \subseteq X \), then \( X \subseteq \mathcal{D} \cap \mathcal{A} \cap \mathcal{B} \subseteq \mathcal{D} \cap \mathcal{A} \cap \mathcal{B} \).

(e) If \( \forall \mathcal{A} \subseteq X \), then \( X \subseteq \mathcal{D} \cap \mathcal{A} \cap \mathcal{B} \subseteq \mathcal{D} \cap \mathcal{A} \cap \mathcal{B} \).

(f) If \( \forall \mathcal{A} \subseteq X \), then \( X \subseteq \mathcal{D} \cap \mathcal{A} \cap \mathcal{B} \subseteq \mathcal{D} \cap \mathcal{A} \cap \mathcal{B} \).

(g) If \( \forall \mathcal{A} \subseteq X \), then \( X \subseteq \mathcal{D} \cap \mathcal{A} \cap \mathcal{B} \subseteq \mathcal{D} \cap \mathcal{A} \cap \mathcal{B} \).

(h) If \( \forall \mathcal{A} \subseteq X \), then \( X \subseteq \mathcal{D} \cap \mathcal{A} \cap \mathcal{B} \subseteq \mathcal{D} \cap \mathcal{A} \cap \mathcal{B} \).

(i) If \( \forall \mathcal{A} \subseteq X \), then \( X \subseteq \mathcal{D} \cap \mathcal{A} \cap \mathcal{B} \subseteq \mathcal{D} \cap \mathcal{A} \cap \mathcal{B} \).

(j) If \( \forall \mathcal{A} \subseteq X \), then \( X \subseteq \mathcal{D} \cap \mathcal{A} \cap \mathcal{B} \subseteq \mathcal{D} \cap \mathcal{A} \cap \mathcal{B} \).

(k) If \( \forall \mathcal{A} \subseteq X \), then \( X \subseteq \mathcal{D} \cap \mathcal{A} \cap \mathcal{B} \subseteq \mathcal{D} \cap \mathcal{A} \cap \mathcal{B} \).

(l) If \( \forall \mathcal{A} \subseteq X \), then \( X \subseteq \mathcal{D} \cap \mathcal{A} \cap \mathcal{B} \subseteq \mathcal{D} \cap \mathcal{A} \cap \mathcal{B} \).

(m) If \( \forall \mathcal{A} \subseteq X \), then \( X \subseteq \mathcal{D} \cap \mathcal{A} \cap \mathcal{B} \subseteq \mathcal{D} \cap \mathcal{A} \cap \mathcal{B} \).

(n) If \( \forall \mathcal{A} \subseteq X \), then \( X \subseteq \mathcal{D} \cap \mathcal{A} \cap \mathcal{B} \subseteq \mathcal{D} \cap \mathcal{A} \cap \mathcal{B} \).

(o) If \( \forall \mathcal{A} \subseteq X \), then \( X \subseteq \mathcal{D} \cap \mathcal{A} \cap \mathcal{B} \subseteq \mathcal{D} \cap \mathcal{A} \cap \mathcal{B} \).

(p) If \( \forall \mathcal{A} \subseteq X \), then \( X \subseteq \mathcal{D} \cap \mathcal{A} \cap \mathcal{B} \subseteq \mathcal{D} \cap \mathcal{A} \cap \mathcal{B} \).

(q) If \( \forall \mathcal{A} \subseteq X \), then \( X \subseteq \mathcal{D} \cap \mathcal{A} \cap \mathcal{B} \subseteq \mathcal{D} \cap \mathcal{A} \cap \mathcal{B} \).

(r) If \( \forall \mathcal{A} \subseteq X \), then \( X \subseteq \mathcal{D} \cap \mathcal{A} \cap \mathcal{B} \subseteq \mathcal{D} \cap \mathcal{A} \cap \mathcal{B} \).

(s) If \( \forall \mathcal{A} \subseteq X \), then \( X \subseteq \mathcal{D} \cap \mathcal{A} \cap \mathcal{B} \subseteq \mathcal{D} \cap \mathcal{A} \cap \mathcal{B} \).

(t) If \( \forall \mathcal{A} \subseteq X \), then \( X \subseteq \mathcal{D} \cap \mathcal{A} \cap \mathcal{B} \subseteq \mathcal{D} \cap \mathcal{A} \cap \mathcal{B} \).

(u) If \( \forall \mathcal{A} \subseteq X \), then \( X \subseteq \mathcal{D} \cap \mathcal{A} \cap \mathcal{B} \subseteq \mathcal{D} \cap \mathcal{A} \cap \mathcal{B} \).

(v) If \( \forall \mathcal{A} \subseteq X \), then \( X \subseteq \mathcal{D} \cap \mathcal{A} \cap \mathcal{B} \subseteq \mathcal{D} \cap \mathcal{A} \cap \mathcal{B} \).

(w) If \( \forall \mathcal{A} \subseteq X \), then \( X \subseteq \mathcal{D} \cap \mathcal{A} \cap \mathcal{B} \subseteq \mathcal{D} \cap \mathcal{A} \cap \mathcal{B} \).

(x) If \( \forall \mathcal{A} \subseteq X \), then \( X \subseteq \mathcal{D} \cap \mathcal{A} \cap \mathcal{B} \subseteq \mathcal{D} \cap \mathcal{A} \cap \mathcal{B} \).

(y) If \( \forall \mathcal{A} \subseteq X \), then \( X \subseteq \mathcal{D} \cap \mathcal{A} \cap \mathcal{B} \subseteq \mathcal{D} \cap \mathcal{A} \cap \mathcal{B} \).

(z) If \( \forall \mathcal{A} \subseteq X \), then \( X \subseteq \mathcal{D} \cap \mathcal{A} \cap \mathcal{B} \subseteq \mathcal{D} \cap \mathcal{A} \cap \mathcal{B} \).
that is, $p^* = p$.  

Hilbert space $H$ is a projection if it is self-adjoint and idempotent. That is, $p^* = p$.  

Show that a bounded linear operator $p : H \rightarrow H$ on a Hilbert space $H$ is a projection if and only if it is self-adjoint and idempotent.

Let $T : X \rightarrow X$ be a bounded linear operator. Where

Compute the dual space of the space $C^\ast$.  

(ii) Integration operator.  

Discuss the boundedness of $T$.  

State and prove Peano-Lemma  

UNIT-III  

Prove that the product of compact topological spaces is compact.  

(ii) compact but not a norm.  

Show that a closed subspace of a compact space is compact.

(iii) Let $H = \prod_{i} H_i$ be a bounded linear operator, where $H_1$ is a complex Hilbert space. Show that it is normal if and only if it is self-adjoint and idempotent.

Show that a bounded linear operator $T$ on a complex Hilbert space $H$ is normal if and only if it is self-adjoint and idempotent.

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UNIT-II  

Show that a bounded linear operator $T$ on a complex Hilbert space $H$ is normal if and only if it is self-adjoint and idempotent.

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Show that a bounded linear operator $T$ on a complex Hilbert space $H$ is normal if and only if it is self-adjoint and idempotent.
P.T.O.

State and prove Maximum Modulus Principle.

\[
\sum_{n=0}^{\infty} a_n z^n = 0 \quad \text{if} \quad f(z) = 0 \quad \text{for} \quad |z| < R.
\]

Taylor’s expansion, then

\[
\sum_{n=0}^{\infty} a_n z^n = 0.
\]

3. If the function \( f(z) \) is analytic when \( |z| < R \), has the

(a) State and prove Liouville’s theorem.

\[ f(z) = 0 \quad \text{if} \quad |z| = R. \]

(b) Evaluate \( \frac{dz}{z^2 - 2z + 1} \) where \( C \) is the circle

\[ |z| = 1. \]

2. (a) State and prove Cauchy’s integral formula and use it to

(b) State and prove Cauchy-Goursat theorem.

UNIT I

Note: Answer the questions in all the sections at least one

Maximum Marks : 80

Time Allowed : 3 Hours

COMPLEX ANALYSIS

4015

MDE/M-22

Total Pages : 3

Roll No.
(q) State and prove Schwarz's reflection principle. 

State if \( f(z) = \sum_{n=0}^{\infty} a_n z^n \) is a normal boundary.

8. (a) Show that the circle of convergence of the power function is equal to the circle of convergence of \( f(z) \).

(b) State and prove Rouché's theorem.

7. (a) Derive Legendre's duplication for the Gamma function.

UNIT IV

State and prove Weierstrass factorization theorem.

6. (a) State and prove Hurwitz's theorem.

UNIT III

State and prove Schocky's theorem.

10. (a) State and prove Borel's theorem.

State and prove Jensen's formula.

9. (a) State and prove Hadamard's theorem for Harmonic functions.

UNIT I

(1) Integrate round a suitable contour, prove that

\[ \oint_{\gamma} \frac{dz}{z} = 2\pi i \]

Equation \( c = x, z < c \) has no roots inside the circle.

(b) State the Rouché's theorem and use it to prove the

UNIT II
1. Find the initial integral equation equivalent to the initial value problem.

\[ p = 0, a, y = 0 = \lambda + \frac{\partial p}{\partial \lambda} + \frac{\partial p}{\partial \lambda} \]

UNIT I

8 marks

Attempt one question in all sections at least one question from each unit. All questions carry equal marks.

Note: Time allowed: 3 Hours

Maximum Marks: 80

Paper - A: MM - 405

DIFFERENTIAL EQUATIONS

4016

MDM-22

Total Pages: 4

ROLL NO: 

Problem 1. Define the Greens function for a boundary value problem of a minimax solution boundary value problem and prove that it is symmetric. Describe oscillatory behavior where \( c = 1 \).

\[ y = (y, c \in C_{1} \setminus 0, c = 1) \]

0 = x(1) + \frac{\partial p}{\partial \lambda} \text{ and } \quad 0 = y(1) + x(1) + \frac{\partial p}{\partial \lambda} \]

8. Explain Picard's equation.

9. Verify that for a Green's function of a minimax solution boundary value problem and prove that it is symmetric. Describe oscillatory behavior where \( c = 1 \).

\[ 0 = (y, c \in C_{1} \setminus 0, c = 1) \]
UNIT-IV

(a) Show that every real solution of the system 

\[ 0 = \lambda (1 + x) + \frac{dx}{dp}, \quad \lambda p + \lambda x = \frac{dp}{dx}, \quad \lambda x + \lambda x = \frac{dx}{dp} \]

are real, unequal and of opposite signs, hence determine the type of critical points of the given system. Draw a sketch and also determine its stability.

(b) Find such numbers \( p \) and \( q \) so that 

\[ p(1)^* + 2p(1) + 3p(1) = 1 \]

is the solution of the equation 

\[ \phi(1)^* + 2\phi(1) + 3\phi(1) = 1 \]

is then their Wronskian is zero. Let \( L \) be the linearly dependent over an interval of solution of a homogeneous linear differential equation and \( C \) is a constant. Find such a fundamental matrix of the given system.

(c) Prove that a necessary and sufficient condition that \( L \) is an order linear differential equation 

\[ [q, p] \in \mathbb{R} \wedge \lambda = \phi(x) \phi(0) = (\phi(x))_{(\lambda - p)} \phi \]

is that \( L \) is a solution of the equation 

\[ \phi(1)^* + 2\phi(1) + 3\phi(1) = 1 \]

is then their Wronskian is zero on \( L \).

(d) Prove that the fundamental matrix of a general system 

\[ \phi(1)^* + 2\phi(1) + 3\phi(1) = 1 \]

is a fundamental matrix of the given system and \( C \) is a constant. Suppose the fundamental matrix of a linear differential equation 

\[ \phi(1)^* + 2\phi(1) + 3\phi(1) = 1 \]

is then their Wronskian is zero on \( L \).

(e) Prove that the fundamental matrix of a general system is a fundamental matrix of the given system and \( C \) is a constant. Suppose the fundamental matrix of a linear differential equation 

\[ \phi(1)^* + 2\phi(1) + 3\phi(1) = 1 \]

is then their Wronskian is zero on \( L \).

(f) Find such numbers \( p \) and \( q \) so that 

\[ p(1)^* + 2p(1) + 3p(1) = 1 \]

is the solution of the equation 

\[ \phi(1)^* + 2\phi(1) + 3\phi(1) = 1 \]

is then their Wronskian is zero on \( L \).

(g) Prove that a necessary and sufficient condition that \( L \) is an order linear differential equation 

\[ [q, p] \in \mathbb{R} \wedge \lambda = \phi(x) \phi(0) = (\phi(x))_{(\lambda - p)} \phi \]

is that \( L \) is a solution of the equation 

\[ \phi(1)^* + 2\phi(1) + 3\phi(1) = 1 \]

is then their Wronskian is zero on \( L \).
1. Prove that every Borel set is measurable.

2. Let $a$ be any real number and $f$ and $g$ be real valued measurable functions defined on a measurable set $E$. Then $f+g$, $c+f$, $cf$, $f+g$, $f-g$ are also measurable. Also, prove that continuous functions carry equal marks.


4. (a) Show that Lebesgue integral is a generalization of the Riemann integral.

(b) Prove the Fundamental Theorem of Calculus.

ON THE PROOF OF REAL ANALYSIS

UNIT I

1. Prove that every set of finite measure, then prove the following.

For all real numbers $a$,

\[ \int_a^b f(x) \, dx = \int_b^a f(x) \, dx \]

(i)

(1)
4. Show that every countable set has measure zero.

Compulsory Question

1. Show that every countable set has measure zero.

2. Define $V_p$ spaces. State and prove Hölder and Minkowski's inequalities in $L^p$ space, $1 < p < \infty$.

3. Define $L^p$ spaces. State and prove Hölder and Minkowski's inequalities in $L^p$ space, $1 < p < \infty$.

4. Prove that if $f$ is absolutely continuous function on $[a,b]$, then it has a derivative almost everywhere.

5. Prove that if $f$ is an absolutely continuous function, then $f$ is differentiable almost everywhere.

6. Prove and prove Lebesgue's differentiation theorem.

7. (a) $\int\int f \leq \int\int g$ when $f \geq g$.

8. (a) $\int\int f \geq \int\int g$ when $f \leq g$.

9. (a) $\int\int f = \int\int g$ when $f = g$.

UNIT II

1. State and prove Lebesgue's differentiation theorem.

2. (a) $\int\int f \leq \int\int g$ when $f \geq g$.

3. (a) $\int\int f \geq \int\int g$ when $f \leq g$.

4. (a) $\int\int f = \int\int g$ when $f = g$.

5. (a) $\int\int f = \int\int g$ when $f = g$.

6. (a) $\int\int f = \int\int g$ when $f = g$.

UNIT III

1. Define $L^p$ spaces. State and prove Hölder and Minkowski's inequalities in $L^p$ space, $1 < p < \infty$.

2. Define $V_p$ spaces. State and prove Hölder and Minkowski's inequalities in $L^p$ space, $1 < p < \infty$.

3. Define $L^p$ spaces. State and prove Hölder and Minkowski's inequalities in $L^p$ space, $1 < p < \infty$.

4. Prove that if $f$ is absolutely continuous function on $[a,b]$, then it has a derivative almost everywhere.

5. Prove that if $f$ is an absolutely continuous function, then $f$ is differentiable almost everywhere.

6. Prove and prove Lebesgue's differentiation theorem.

7. (a) $\int\int f \leq \int\int g$ when $f \geq g$.

8. (a) $\int\int f \geq \int\int g$ when $f \leq g$.

9. (a) $\int\int f = \int\int g$ when $f = g$.

10. (a) $\int\int f = \int\int g$ when $f = g$.
UNIT I

Define module

Define sequential file and direct access file.

By $x$, $y$ are real

Write the built-in function to find remainder of $x$ divided

Differentiate the operators $= \Rightarrow$

Write the significance of subprogram in a program.

- Explain logical operators of FORTRAN 90/95.
- Define subprogram.

Define array of fixed size and variable size.

Explain evaluation rule used for evaluating the

Example of Question

Note: Attempt five questions in all, selecting one question.

Maximum Marks: 80

PAPER-MW-409

COMPUTER PROGRAMMING

4467

MDEM-22

Total Pages: 3
(b) Chart the declarations of variables of various data types supported by Fortran.

3. (a) Describe the syntax of formatted and format free output statement with example.
(b) Define Data. List the various data types supported by Fortran with example.

UNIT–II

4. Define array. Explain the syntax of declaration and initialization of fixed and variable size. Discuss the different ways of input and output of arrays.

5. (a) Differentiate function and subroutine subprogram.
(b) Write a program to check a given year is leap or not using else if structure.

UNIT–III

6. (a) Explain the format specifications of various data types used for output purpose.
(b) Writing the syntax of declaring a character string, discuss the concatenation and substring operators.

7. (a) How array arguments of arrays fixed or variable size are passed in a subprogram? Illustrate with a program of your choice.
(b) Write short note on DERIVED TYPE.

UNIT–IV

8. (a) Define file. Explain the OPEN statement to create a file for writing the results in a program.

(b) Write a program to add two complex numbers.

9. Define pointer. Explain the syntax to declare a pointer and its association with variable with example. Write a program to access the address of a variable and its value using pointer.
UNIT III

Define Legendre's duplication formula for the Gamma

You may select one question from each Unit. No. 1 is compulsory. All questions carry equal marks.

Note: Attempt five questions in all. Select any one question from each unit.

TIME ALLOWED: 3 HOURS

MAXIMUM MARKS: 80

PAPER - MME-1-410

COMPLEX ANALYSIS II

4668

MME/M-22
7. If \( f \) be the order of an integral function \( f(z) \), then show that:

\[
\lim_{r \to 0} \frac{\max |f(z)|}{\log r} = \gamma
\]

Then prove Poisson's formula:

\[
\frac{1}{\pi} \int_C \frac{f(\zeta)}{(\zeta - z)^2} d\zeta = \frac{1}{2\pi i} \int_C \frac{f(\zeta)}{\zeta - z} d\zeta
\]

8. (a) \( f \) is an entire function that attains two values then show that:\n
\[
f(z) = e^{2\pi i \lambda z}
\]

(b) \( f \) is a constant function if \( f \) attains two values then show that:

\[
f(z) = e^{2\pi i \lambda z}
\]

(c) \( f \) is an entire function that attains two values then show that:

\[
f(z) = e^{2\pi i \lambda z}
\]

(d) \( f \) is a constant function if \( f \) attains two values then show that:

\[
f(z) = e^{2\pi i \lambda z}
\]

(e) \( f \) is an entire function that attains two values then show that:

\[
f(z) = e^{2\pi i \lambda z}
\]

(f) \( f \) is a constant function if \( f \) attains two values then show that:

\[
f(z) = e^{2\pi i \lambda z}
\]

(g) \( f \) is an entire function that attains two values then show that:

\[
f(z) = e^{2\pi i \lambda z}
\]
UNIT I

2. (a) If \( x \) and \( y \) are two linear independent solutions of the homogeneous BVP

\[
\begin{align*}
\text{(H.1)} \quad & y'' + p(x)y' + q(x)y = 0, \\
\text{(H.2)} \quad & y'(a) = 0, \\
\text{(H.3)} \quad & y'(b) = 0,
\end{align*}
\]

then the Green's function of the corresponding problem is given by

\[
G(x, s) = \int_a^b y_1(x) y_2(s) \frac{y_1'(s) y_2'(x) - y_1'(x) y_2'(s)}{y_1'(s) y_2(s) - y_2'(s) y_1(s)} \, ds,
\]

where

\[
y_1(x) = (x) y_1'(a), \quad y_2(x) = (x) y_2'(a),
\]

proving that the solution of the BVP is

\[
0 = (x) y_1 + (x) y_2 = (q(x) y_1 + (x) y_2)|_{x=a}^{x=b}.
\]

Prove that the solution of the BVP is

\[
0 = (x) y_1 + (x) y_2 = (q(x) y_1 + (x) y_2)|_{x=a}^{x=b}.
\]

8. Prove that the solution of the boundary value problem is

\[
0 = (1) y_1 + (1) y_2 = (q(x) y_1 + (x) y_2)|_{x=a}^{x=b}.
\]
8. (a) Explain the relation between the initial value problem and periodic solutions of a system of differential equations. When are initial cycles? Explain the relation between initial cycles and periodic solutions.

Prove that the given system has no closed path in domain $D$ and prove that every solution has the same sign throughout $D$.

8. (b) Given a system $x' = f(x)$, if $f'(x) = 1$, prove that $x = x + C$ or $x = x - C$.

6. (a) Find the stability of solution by Liapunov's direct method of the system.

UNI-T III

8. (b) Prove that if two linearly independent solutions satisfy a second-order linear homogeneous differential equation, then they are solutions of the differential equation.

Prove that a plane autonomous system is stable if and only if

8. (a) Define a plane autonomous system. State and prove the theorem stating that a plane autonomous system is stable if and only if

$\frac{\partial}{\partial \lambda} \frac{\partial}{\partial \sigma} = \frac{\partial}{\partial \sigma} \frac{\partial}{\partial \lambda}$

8. (a) Explain the nature and stability of the critical point of

$0 = (1)x(1)a + (1)x(1)b + (1)x(1)c$
PART I

1. (a) Find the solution of

\[ \phi_0 = \frac{1}{r} \times \frac{d}{dr} \left( r \frac{d\phi}{dr} \right) \]

on \( 0 = r, \; 0 = \phi \) in \( r \), \( \phi \).

2. (a) Derive the fundamental solution of Laplace's equation through the curve \( x = y = 0 \).

\[ z \left( x + x \right) = b \cdot (x - x) + d \cdot (x - x) \]

(b) Find the integral surface of the equation:

\[ \frac{\partial^2 z}{\partial y^2} + \frac{\partial^2 z}{\partial x^2} = 2 \frac{\partial ^2}{\partial x^2} \left( \frac{\partial z}{\partial x} \right) \]

3. (a) Find the complete integral of the equation:

PARTIAL DIFFERENTIAL EQUATIONS AND MECHANICS

Note: Attempt five questions in all selecting at least one from each unit.

Maximum Marks: 80

Total Pages: 3
UNIT-I

1. (a) Define the condition of canonical character of a

(b) Find the condition of canonical character of a

2. (a) Derive Whittaker's equations of Motion.

\[ \frac{d^2 \mathbf{r}}{dt^2} = \mathbf{F} \]

Motion is

3. (a) Prove that the condition of canonical character of the Hamiltonian, \( H \), is the necessary and the sufficient condition for the existence of the Hamiltonian equations of motion and prove

4. (a) State and prove Donkin's theorem.

5. (a) Prove that the kinetic energy of a holonomic system is a function (or polynomial) of the second degree in the generalized velocities.

6. (a) Prove that the Hamiltonian is the exact differential of the functional of the

UNIT-II

7. (a) Define the condition of real Hamiltonian.

(b) Define Fourier transform and its inverse, and use it to find

\[ \mathcal{F}\{f(x)\} = \int_{-\infty}^{\infty} f(x) e^{-2\pi i x t} dx \]

8. (a) Define the Hamiltonian and derive the Hamiltonian ODE

(9) Write a note on Lagrangian formalism.

8. (a) Define the Hamiltonian and derive the Hamiltonian ODE

(10) Write a note on Lagrangian formalism.

7. (a) Define the condition of real Hamiltonian and derive the Hamiltonian ODE

(11) Write a note on Lagrangian formalism.
UNIT-IV

8. (a) What is Recursion? How are the local variables of any recursive sub-program interpreted in C? 8

(b) Write a C program to arrange the n integers in ascending order. 8

9. (a) How a string is stored in C? 2

(b) Explain the following string handling functions:
   (i) strstr()  (ii) strcpy()
   (iii)strupr() (iv) strlen() 8

(c) How can a one dimensional array of pointers be used to represent a collection of strings in C? 6

10. (a) What do you understand by Opening a Data file? Describe various mode of opening a data file in C. 8

(b) Differentiate one dimensional and two dimensional arrays. Also write about how initial values can be specified for each type of array. 8

UNIT-I

1. (a) State and prove Jordan-Hoelder theorem. 8

(b) Define the following terms:
   (i) Partially Ordered Set.
   (ii) Isomorphism of Lattices.
   (iii) Distributive Lattice.
   (iv) Complemented Lattice. 8

2. (a) Show that

\[(x \lor x) \land ((x \land y) \lor y) \land (x' \land y') = x \land y\]

using law of Boolean algebra. 8

(b) Construct the circuit corresponding to Boolean function \(x \cdot y + (y \cdot z) \cdot x'\) of the Boolean algebra of switching circuits. 8

[MDQ/M-22]

DISCRETE MATHEMATICS COMPUTER PROGRAMMING

Paper-MM-502/VII

Time Allowed: 3 Hours] [Maximum Marks: 80

Note: Attempt five questions in all, selecting at least one question from each Unit.
8. Write a program to generate first n prime numbers.

7. (a) Explain the purpose and syntax of various decision-making commands.
    (i) if (condition) { (then) } (else) { (then) }

6. (a) Draw the complete graph K₃. Find all its spanning trees.
    (b) Draw in blue (n - 1) edges.

5. (a) Prove that a connected graph G with n vertices is a tree if and only if it
    has (i) |V| - 1 edges (ii) no odd vertices
    (iii) no pendant vertices (iv) no pendant edges.

4. (a) When are various data bases in C language?

UNIT III

Respectively,
number regions and e is the number of edges in G.
The number of vertices is the number of regions.
Show that \( V = E - 2 \), where \( G(V, E) \) is connected.

8. Represent the following graph as an incidence matrix as shown below:

Diagram of a graph with labeled vertices and edges.

8. Determine the following from the graph as shown in figure below:

3. (a) Prove that the maximum number of edges in a simple
3. (a) A given quantity of liquid moves, under its forces, of boundary surface.

\[ \frac{\partial}{\partial t} \left( \frac{q}{V} \right) + \nabla \cdot \left( \frac{q}{V} \mathbf{v} \right) = 0 \]

Show that \( \frac{q}{V} \) is a possible form.

(b) Discuss general analysis of fluid motion.

8. Equations of stream lines for incompressible fluid. If yes, then determine the cartesian coordinates.

1. (a) Does \( \frac{x}{y} + \frac{y}{x} \) represent a possible fluid motion?

UNIT I

Marks

Note: Attempt five questions in all, selecting at least one

Time Allowed: 3 Hours

Paper-IX: MIN-504 (I)

FLUID MECHANICS AND HYDRAULICS

142

Module-22

ROLL No.

Total Pages: 3
UNIT-III

8. Describe steady flow of viscous fluids between two parallel plates.

9. When is the mean value of the velocity potential equal to its value at the center wholly within the fluid, then the mean value of the velocity at the boundary of a spherical surface lying wholly within the fluid, then the mean value of the velocity within the fluid.

10. Solve Lamb’s problem for a normal line source when $\phi = 0$ and $\phi = 0$ when $x = 0$.

Solve

\[
\frac{\partial^2 \phi}{\partial x^2} = \frac{1}{2} \frac{\partial^2 \phi}{\partial t^2}
\]

(b) When $x = -l$.

UNIT-IV

8. Wave equation in terms of cylindrical coordinates.

9. When a wave is incident on the boundary of elastic solid and then solve the wave equation using solution.

10. Wave equation in terms of cylindrical coordinates.

UNIT-V

8. Explain the use of Bernoulli equation in one-dimensional flow problems.

where the pressure at the two surfaces being equal.

Show that:

At the vertices of the wave at time 1 and at

\[
0 = \left[ \frac{\varepsilon^2 - \frac{1}{2} \frac{1}{\varepsilon^2}}{\varepsilon^4 - \frac{1}{2} \frac{1}{\varepsilon^2}} \right] \left( \frac{dp}{dp} \right) + \left( \frac{dp}{dp} \right)
\]

2.
3. Define fuzzy number. Determine which fuzzy sets defined by

\[ \text{UNIT-II} \]

\[ \text{curvilinear} \]

2. Prove that the extension principle is stronger curvilinear but not

\( \text{(b)} \) Same and prove fuzzy decomposition theorem.

and strong co-curves of fuzzy sets. Support of a fuzzy set

\( \text{(a)} \) Describe the concept of a fuzzy set. Also define co-curves

\[ \text{UNIT-I} \]

question from each Unit. All questions carry equal marks.

\[ \text{Note} \]

Accept any five questions in all sections at least one

\[ \text{Maximum Marks} : 80 \]

\( \text{Option-(!)} \)

\[ \text{Paper-1X : M1-304} \]

FOZZY SETS AND WAVELETS

MB4/M.22

4143

Total Pages: 3

Roll No.
UNIT-III

5. Define the following terms:
   (a) Possibility theory versus probability theory.
   (b) Possibility set and possibility distribution.
   (c) Possibility distribution function.
   (d) Possibility distribution on binary fuzzy relation.
   (e) Possibility distribution on binary fuzzy relation.

6. Let $f \in L(\mathbb{R})$. Then prove that Fourier transform of $f$ is uniformly continuous on $\mathbb{R}$.

\[ f \in L(\mathbb{R}) \text{ with } f \in L^1(\mathbb{R}) \text{ and } f \text{ is uniformly continuous on } \mathbb{R}. \]

7. (a) Fourier transform of a function.
    (b) Wavelet transform.
    (c) Wavelet packet.
    (d) Biorthogonal wavelets.
    (e) Discuss the following:

8. (a) Define multi-resolution analysis. Discuss construction of Haar wavelets.
    (b) Discuss the following:

9. Discuss various applications of wavelets in signal analysis.

UNIT-IV

10. Discuss various applications of wavelets in signal processing.
    (a) Wavelet frames.
    (b) Wavelet packets.
    (c) Biorthogonal wavelets.

UNIT-V

7. (a) Define and prove Plancherel theorem.
    (b) Discuss the following:
    (c) \[ f(w) = 1 \wedge F(w) \text{ and } \]
    (d) If the derivative \( f' \) of \( f \) also exists and is in \( L(\mathbb{R}) \), then
    (e) \[ f \in L(\mathbb{R}) \text{ with } f \in L^1(\mathbb{R}) \text{ and } f \text{ is uniformly continuous on } \mathbb{R}. \]

8. (a) Kurzynski.
    (b) Fuzzy measure.
    (c) Fuzzy membership.
    (d) Fuzzy pre-ordering, weak ordering.
    (e) Fuzzy compatibility relations.
    (f) Fuzzy equivalence relation.

Define an integral equation and explain its type and kind.

1. Let

\[ \int_0^y (s) f(s) ds = (s) \phi \]

\[ \text{Obtain the Neumann series for the integral} \]

2. Prove that the integral equation

\[ \sin \cos \int_0^y \gamma + (s) f(s) ds = (s) \phi \]

3. Invert the integral equation.

4. Solve the integral equation and explain its type and kind.

**PROBLEMS**

**4144**

**MDE/M-22**

Total Pages: 4

Roll No. 4

**4144/K/2895/500

\[ \int_0^y (s) f(s) ds = (s) \phi \]

**Problem:**

Given and \( \phi \) is known, using two-point boundary value where the function \( f(s) \) and the kernel \( K(t) \) are

\[ \int_0^a (d)(s) = \int_0^a (d)(t) \int_0^a (d)(s) ds dt \]

Find the solution of the integral equation.
UNIT I

(a) Solve the integral equation

\[ J(s) = \int_0^s e^{-\alpha(t-s)} \gamma dt \]

(b) Obtain the Poisson integral formula

\[ u(x) = \frac{1}{2\pi} \int_{\partial D} \frac{\phi(y)}{|y-x|} \, dS_y \]

(c) Solve the boundary value problem

\[ \begin{cases} \Delta u + \lambda u = 0 & \text{in } D \\ u = \phi & \text{on } \partial D \end{cases} \]

UNIT II

(a) Solve Fredholm integral equation

\[ \int_0^1 (\lambda t + \phi(t)) \psi(t) \, dt = \int_0^1 \psi(t) \, dt \]

(b) Prove that the series for the resolvent kernel

\[ \int_0^1 (\lambda t + \phi(t)) \psi(t) \, dt = \sum_{n=0}^\infty \frac{(-\lambda)^n}{n!} \phi(t) \psi(t) \]

is absolutely and uniformly convergent in the circle

\[ |\lambda t + \phi(t)| < 1 \]

UNIT III

(a) Solve Fredholm integral equation

\[ \int_0^1 f(t) \psi(t) \, dt = \psi(0) \]

(b) Solve the self-adjoined initial value problem

\[ \begin{cases} \frac{d}{dt} \psi(t) = f(t) & \text{in } (0, T) \\ \psi(0) = 0 \end{cases} \]
5.2 (a) State and prove Arzela-Ascoli Theorem.
(b) Prove or disprove this statement.
(c) Convergence in measure does not imply convergence.

UNIT II

8. Uniformly approximated by simple functions.
Show that any bounded measurable function can be approximated uniformly by a sequence of simple functions. 

2. (a) If $f$ is measurable and $\phi$ is a Borel measurable function such that $\phi(f) = 0$, prove that the composite function $\phi \circ f$ is measurable.
(b) If $f$ is a measure on $\mathbb{R}$, show that $f$ is finite valued.

UNIT I

Questions carry equal marks.

Note: Attempt five questions in all, selecting one question from each unit.

Maximum Marks: 80

Time Allowed: 3 Hours

PAPER-MI-507

GENERAL MEASURE AND INTEGRATION THEORY

5506 MIDM-22

Total Pages: 4

(5) State (only) the Radon-Nikodym theorem.

(6) Let $\{f(x)\}$ be a continuous real valued function on $X$, and $C$ be a real number. Show that $A = \{x : f(x) \geq C\}$ is a closed set.

(7) If $\mu$ is a measure, a partial converse to the Radon-Nikodym theorem (only).
1. For a measurable function, show that the following conditions are equivalent:

ii) $\forall \lambda \geq 0$, there exists a measurable set $E$.

iii) For every measurable set $E$.

b) Let $\lambda$ be a finite signed measure on $\mathbb{R}$. Show that:

\[ \mu = 0 \Rightarrow \exists \mathcal{E} \ni \mu^{c} = 0 \Rightarrow \mu = 0 \]

6. (a) Let $(x, y) \in \mathbb{R}^2$ be a measure space, and $\lambda$ be a finite

measure on $\mathcal{C}$. Show that the following conditions on

both $\mathcal{C}$ and $\lambda$ exist, and

$\sum a$ is integrable with $\lambda$ and $\lambda > 0$. Show that

UNIT-IV

7. (a) $f$ is a compact (c) show that there exists a

sequence $f_n$ in $\mathcal{C}$ such that $f_n \uparrow f$. State clearly the

UNIT-IV

8. $\int f \, d\lambda = 0$, and only if $\lambda = 0$. Show that the following conditions are equivalent:

ii) $\forall \lambda \geq 0$, there exists a measurable set $E$.

iii) For every measurable set $E$.

b) Let $\lambda$ be a finite signed measure on $\mathbb{R}$. Show that:

\[ \mu = 0 \Rightarrow \exists \mathcal{E} \ni \mu^{c} = 0 \Rightarrow \mu = 0 \]

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6. (a) Let $(x, y) \in \mathbb{R}^2$ be a measure space, and $\lambda$ be a finite

measure on $\mathcal{C}$. Show that the following conditions on

both $\mathcal{C}$ and $\lambda$ exist, and

$\sum a$ is integrable with $\lambda$ and $\lambda > 0$. Show that
UNIT II
(b) State and prove Hermite's Inequality.

Solution:
\[ \forall n \in \mathbb{N}, \quad n = \sum_{k=0}^{\infty} \frac{a_k}{k!}, \quad \text{has a unique} \]
sequence \(a_0, a_1, a_2, \ldots\) in \(\mathbb{R}\) where \(f \in C^2\).

(a) State maximum principle and use it to prove that

\[ \Delta u = f(x) \quad \text{in} \quad \Omega \]

has a unique solution for Poisson equation.

UNIT I

Questions carry equal marks.

From each Unit, Question No. 9 is compulsory. All
questions carry equal marks.

Attempt five questions in all, selecting one question
from each unit.

Maximum Marks : 80

Time Allowed : 3 Hours

PARTIAL DIFFERENTIAL EQUATION

5507

Mid/M-22
9. Answer all the following:

**Question**

(a) Derive the formula for Laplace transform.

\[ \{0 = 1\} \times \bigcap_{j \in \mathbb{N}} U_j = \Lambda \]

(b) Solve by Laplace transform method.

\[ (\infty, 0) \times \bigcap_{j \in \mathbb{N}} U_j = 0 \]

Obtain the wave equation solution of Kelvin's problem.

(c) Discuss the entropy solution of the Riemann's problem.

**UNIT III**

Define Fourier transform.

Verify Plane wave and traveling wave.

Find the complete integral of PDE.

State d'Alembert's formula for one-dimensional wave equation.

State Duhamel's principle.

Write properties of Green's function.

Give physical interpretation of Laplace equation.

Show that there exists a unique solution.
UNIT II

(a) For a simply connected region, prove that the wave velocity of the complex function

\[ \frac{d}{dz} \sqrt{\frac{p}{1 + \frac{p}{\gamma}}} \]

(b) Discuss the structure of the complex function

\[ \frac{d}{dz} \sqrt{\frac{p}{1 + \frac{p}{\gamma}}} \]

UNIT I

Questions carry equal marks. From each unit question No. 9 is compulsory. All questions are compulsory. All questions are to be attempted. The maximum marks for the question is 80.

60 Hours: 3 Hours

MECHANICS OF SOLIDS

5508 22

Total Pages: 3

R001 No.
boundary
rectangle $0 \leq y \leq 1$, $y = 0$ on the
Solve by Kantorovich method $u'' + u = 0$

\( 0 = (1) \lambda = (0) \lambda \)

\( 0 = x + \lambda - \lambda \)

“mended”
Solve the boundary value problem by Rayleigh-Ritz

While a more on deflection of elastic membrane
Solve and prove reciprocal theorem of Peirce and Rayleigh

UNIT-IV

Show that the maximum stress occurs at the extremities
value on the boundary of $C$ of the region $R$.
Region $R$ then shows that this function attains its maximum
in a constant satisfying the equation $\Delta \Phi \geq 0$ in the $C$ of class $C^2$ and not identically equal
      \( \text{Region bounded by } C \)

that $\nabla \Phi = 0$ in $R$ and $\nabla \Phi = \nabla \Phi$ on $C$ where $R$ is the
cross-section $C$ can be solved in terms of a function $\Phi$ such
5. Show that the problem of torsion of a beam of uniform

UNIT-III

Solve the problem of bending of a beam by internal couple
semi-infinite elastic medium. All the wave dispersive

Define the frequency equation of Rayleigh waves in a
(i) Find the wave length of \( \phi = a \sin(2x + 2y + 2z - 1) \).

(ii) What is the relation between group and phase velocity.

(iii) What is the role of seismic waves?

(iv) Explain occurrence of an earthquake.

(v) What is a seismograph?

(vi) Illustrate the case when the phase difference between two waves is an odd multiple of \( \pi \).

(vii) Explain wavelength and frequency of a harmonic wave.

\[
\frac{\lambda_1}{\lambda_2} = \frac{f_1}{f_2}
\]

(viii) Find the progressive type solution of the wave equation is easier.

(a) Which wave out of dilational and equal-volume waves

\textbf{Compulsory Question}

From each Unit, choose Question No. 1 is compulsory.

\textbf{Note:} Attempt five questions in all selecting one question from each section.

\textbf{Maximum Marks: 80}

\textbf{Time Allowed: 3 Hours}

\textbf{Paper-M.31111} (i)
UNIT-IV

8. Prove that spherical waves can be expressed as a superposition of plane waves in an elastic medium.

9. Explain the following:
   (a) Focus of an earthquake.
   (b) Seismic phases in core of the Earth.
   (c) Elastodynamic theory.
   (d) Earthquake intensity.

UNIT-V


9. When a concentrated point source acts on a surface in infinite domain, obtain the radial and normal displacements and stresses.

UNIT-III

8. SH wave at a solid-solid interface.

9. Derive the reflection and transmission coefficients for incident and reflected waves.

UNIT-II

8. Explain inhomogeneous wave equation and obtain its solution.

9. Explain the nodes and anti-nodes.

3. What are stationary waves and why are they called so?

8. When \( x = \frac{H}{2} \), solve the differential equation:

\[
\frac{\partial^2 \phi}{\partial x^2} + \frac{\partial^2 \phi}{\partial z^2} = 0
\]

9. Find the progressive type solution of spherical waves.
UNIT I

2. (a) Prove that the total degeneracy of a hydrogen atom and radial equations:

\[ n^2 - l^2 - \ell (\ell + 1) \]

(b) Equation for a spherically symmetric potential into angular.

(c) Explain the separation of three-dimensional Schrodinger equation for the two electrons system.

(d) Consider two electrons moving in a central potential.

UNIT II

2. (a) When is phase shift? Give the significance of the sign.

(b) Show that the commutator \([L_\beta, L_\beta] = j L^2\) of angular momentum.

(c) \(\hat{L}_1^2 = 0\), \(\hat{L}_2^2 = 0\). Using this information prove that the only solution of \(\hat{L}_1\) is \(L_1 = 0\) and \(L_2 = 0\).

Q. (a) Consider your Hamiltonian \(H = \hat{L}_1^2 + \hat{L}_2^2\) and maximum \(\ell = 1\).

Q. (b) Consider your Hamiltonian \(H = \hat{L}_1^2 + \hat{L}_2^2\) and maximum \(\ell = 1\).

Q. (c) Consider your Hamiltonian \(H = \hat{L}_1^2 + \hat{L}_2^2\) and maximum \(\ell = 1\).

Q. (d) Consider your Hamiltonian \(H = \hat{L}_1^2 + \hat{L}_2^2\) and maximum \(\ell = 1\).

Q. (e) Consider your Hamiltonian \(H = \hat{L}_1^2 + \hat{L}_2^2\) and maximum \(\ell = 1\).

Q. (f) Consider your Hamiltonian \(H = \hat{L}_1^2 + \hat{L}_2^2\) and maximum \(\ell = 1\).

Q. (g) Consider your Hamiltonian \(H = \hat{L}_1^2 + \hat{L}_2^2\) and maximum \(\ell = 1\).

Q. (h) Consider your Hamiltonian \(H = \hat{L}_1^2 + \hat{L}_2^2\) and maximum \(\ell = 1\).

Q. (i) Consider your Hamiltonian \(H = \hat{L}_1^2 + \hat{L}_2^2\) and maximum \(\ell = 1\).

Q. (j) Consider your Hamiltonian \(H = \hat{L}_1^2 + \hat{L}_2^2\) and maximum \(\ell = 1\).

Q. (k) Consider your Hamiltonian \(H = \hat{L}_1^2 + \hat{L}_2^2\) and maximum \(\ell = 1\).

Q. (l) Consider your Hamiltonian \(H = \hat{L}_1^2 + \hat{L}_2^2\) and maximum \(\ell = 1\).

Q. (m) Consider your Hamiltonian \(H = \hat{L}_1^2 + \hat{L}_2^2\) and maximum \(\ell = 1\).

Q. (n) Consider your Hamiltonian \(H = \hat{L}_1^2 + \hat{L}_2^2\) and maximum \(\ell = 1\).

Q. (o) Consider your Hamiltonian \(H = \hat{L}_1^2 + \hat{L}_2^2\) and maximum \(\ell = 1\).

Q. (p) Consider your Hamiltonian \(H = \hat{L}_1^2 + \hat{L}_2^2\) and maximum \(\ell = 1\).

Q. (q) Consider your Hamiltonian \(H = \hat{L}_1^2 + \hat{L}_2^2\) and maximum \(\ell = 1\).

Q. (r) Consider your Hamiltonian \(H = \hat{L}_1^2 + \hat{L}_2^2\) and maximum \(\ell = 1\).

Q. (s) Consider your Hamiltonian \(H = \hat{L}_1^2 + \hat{L}_2^2\) and maximum \(\ell = 1\).

Q. (t) Consider your Hamiltonian \(H = \hat{L}_1^2 + \hat{L}_2^2\) and maximum \(\ell = 1\).

Q. (u) Consider your Hamiltonian \(H = \hat{L}_1^2 + \hat{L}_2^2\) and maximum \(\ell = 1\).

Q. (v) Consider your Hamiltonian \(H = \hat{L}_1^2 + \hat{L}_2^2\) and maximum \(\ell = 1\).

Q. (w) Consider your Hamiltonian \(H = \hat{L}_1^2 + \hat{L}_2^2\) and maximum \(\ell = 1\).

Q. (x) Consider your Hamiltonian \(H = \hat{L}_1^2 + \hat{L}_2^2\) and maximum \(\ell = 1\).

Q. (y) Consider your Hamiltonian \(H = \hat{L}_1^2 + \hat{L}_2^2\) and maximum \(\ell = 1\).

Q. (z) Consider your Hamiltonian \(H = \hat{L}_1^2 + \hat{L}_2^2\) and maximum \(\ell = 1\).

Note: Attempt five questions in all, selecting one question from each unit. Question No. 1 is compulsory.

Maximum Marks: 55

Time Allowed: 3 Hours

Page 1

Quantum Mechanics

4651

M. DE/M-22

Total Pages: 3
1. Describe the spin and total wave function for a system of two spin 1/2 particles.

2. Obtain the quantum mechanical expression for the wave function of a system of two spin 1/2 particles.

3. Calculate the spin wave functions of the system of two spin 1/2 particles.

4. Evaluate the Clebsch-Gordan coefficients for momentum operators \( \hat{J}_x \) and \( \hat{J}_y \) as a basis, find matrix representation of the angular momentum operators \( \hat{J}_+ \) and \( \hat{J}_- \) through an interchanging angle.

5. Find an expression for \( x \) using a relation about x-axis of angular momentum is given by \( \frac{p_x}{\hbar} = -i \hbar \hat{J}_z \).

6. In spherical polar co-ordinates, show that the z-component of angular momentum is given by \( \frac{p_z}{\hbar} = -i \hbar \hat{J}_\theta \).

7. What do you mean by angular momentum? Describe the time development of quantum mechanical transformation from x-representation to p-representation.

8. Explain in detail the first order and second order line scattering amplitude.

UNIT I

1. Explain direction cosine.

2. When is sky wave transmission?

3. What will you mean by O of a cavity?

4. How temperature can affect the performance of an antenna?

5. What is the surface impedance?

Compulsory Question

Questions carry equal marks. 
From each Unit Question No. 1 is compulsory. 

Note: Attempt five questions in all selecting one question from each Unit. Time Allowed: 3 Hours 
Maximum Marks: 55

UNIT II

1. Describe Poising theorem.

2. Discuss reflection and refraction of plane waves.

3. (a) Good conductor

(b) Good dielectric and

(c) Good propagation in (i) Good dielectric and

(d) Open expression for attenuation factor and phase shift

R:O.

5. What do you mean by a waveguide? How many types of waveguides available?
UNIT I

9. Describe in detail the effects of earth magnetic field on
   (a) What is Faraday rotation? Hence find the tilt angle
   (b) Briefly describe about ionosphere.

8. (a) Briefly describe about ionosphere.

7. Write short notes on the following:
   (a) Biornual array.
   (b) Two element array.

6. (a) Describe directional properties of dipole antennas.
   (b) Power radiated by a half wave dipole.

5. (a) Discuss oscillating dipole. Determine the expression for
   (b) Discuss crossed field motion of charged particle.

4. (a) Discuss the motion of charged particle in a magnetic
   (b) Explain TE and TM modes in a circular wave guide.
UNIT I

1. Define a term moderating path for a moderator.
2. Carbon.

(c) Find the number of collisions necessary to reduce the energy of a 2.0 MeV neutron to 0.025 eV in scattering by nitrogen.

(d) How is this energy absorbed?

(e) Why does the pulse height from a G-F tube decrease?

(f) What do you understand by the term 'infinite nuclear absorption'?

Compulsory Question

Scientific (non-programmable) calculator is allowed.

From each Unit, Question No. 1 is compulsory. Use of all questions in all sections is encouraged.

Note: Attempt five questions in all, selecting one question from each section.

Maximum Marks: 55

Paper III

APPLIED NUCLEAR SCIENCE

4653

MDE/M-22

Total Pages: 2

Roll No. 2
UNIT IV

5. Describe the various features of a Pu-Be neutron source.
6. What factors lead to energy distribution of neutrons emitted by a radioactive source?

7. Discuss the mechanism of generation of neutrons using a nuclear reactor.

UNIT III

4. Why is the resolution of a detector important for determining the energy of the detected gamma ray?
5. What are the factors affecting the energy resolution of a scintillation detector?

6. Define the term energy resolution of a detector. Discuss the construction and working of a lithium drifted detector.
3. Explain the origin of the Thomas-Fermi result in the expression for the density response function.

4. In the Lindhard theory of screening, the static charge density response function is given by...

5. L is an operator for a lattice translation. L satisfies the relation: L \( \cdot f \) = c \( \cdot L \cdot f \).

6. a) Show that a Bloch's theorem. Show that a Bloch function...

**Compulsory Question**

From each unit question, 1 is compulsory.

Please answer five questions in all. Select any five questions.

Maximum Marks: 55

Time Allowed: 3 Hours

PAPER 1

NANO TECHNOLOGY

CONDENSED MATTER PHYSICS AND

4654

MDE-M-22

ROLL NO.

TOTAL PAGES: 3
UNIT I

1. Describe the working of a ballistic-lens scan gun device.

2. Discuss the potential of quantum devices.

3. Find the area of a square whose diagonal is 7 cm.

UNIT II

4. What is the order of magnitude with which the impurity deconcentration is equivalent to a quantum confinement, how can this potential be introduced and made fixed in a metal? Explain how you would determine the potential.

5. Write down Fermi’s golden rule. Explain how you would determine the energy in a crystal and apply it to calculate the same energy in a crystal, and apply it to calculate the same.

UNIT-I

2. (a) Explain the slew rate of an OPAMP.

3. (a) Explain the nature of class AB power amplifier.

4. (a) Explain the efficiency of a class A power amplifier is better than B class amplifier.

5. (a) Define dark current. How can it be reduced?

6. (a) List the factors which affect the Q-point of a BJT amplifier.

Compulsory Question

Questions carry equal marks.

Attention: Attempt five questions in all, selecting one question from each Unit. Question No. 1 is Compulsory. All questions carry equal marks. Maximum Marks: 55

Time Allowed: 3 Hours

PAPER-IV

ELECTRONIC-II

4655

MDE/M-22

P. T. O.

6. (b) \( R = 1 \Omega \)

\( t = 15 \mu s \), find diode currents \( i_D \) if \( R = 10 \Omega \) and whereas diode \( D_2 \) is of silicon with \( V_T = 0.6 \) \( \mu V \) and \( D_1 \) is of germanium with \( V_T = 0.2 \) \( \mu V \) and \( t = 20 \mu s \). Which diode with incremental resistance \( r_i \) and offset voltage \( V_o \) of diode \( D_1 \) is described by a linearized \( V-I \) characteristics?

2. (a) Each diode is described by a linearized \( V-I \) characteristics.
1. Explain the Barkhausen criterion for sustained oscillations.

2. What do you understand by the overloads and short-circuit?

3. Explain the V-I characteristics of a UJT and further explain the sinusoidal operation and applications of a UJT.

4. Briefly explain the V-I characteristics of a SCR and further explain the operation and applications of a SCR.

5. Why do you understand by the overloads and short-circuit?

6. Sketch voltage regulated power supplies.

7. Explain the operation of a switched mode power supply.

8. Why OPAMPs are so popular in electronic industries?

UNIT II

5. Explain the concept and importance of load line analysis.

6. Justify the need of clipping circuits. Further explain the illustration.

7. Describe the superposition theorem with a suitable illustration.

8. Explain the operation of a class-B push-pull amplifier.

9. Also list its advantages and disadvantages.

10. Also list its practical applications.

11. Explain the operation of a switched mode power supply.

UNIT III

5. Explain the V-I characteristics of a UJT and further explain the sinusoidal operation and applications of a UJT.

6. Briefly explain the V-I characteristics of a SCR and further explain the operation and applications of a SCR.

7. Why do you understand by the overloads and short-circuit?

8. Sketch voltage regulated power supplies.

9. Explain the operation of a switched mode power supply.

10. Explain the concept and importance of load line analysis.

11. Justify the need of clipping circuits. Further explain the illustration.

12. Describe the superposition theorem with a suitable illustration.

13. Explain the operation of a class-B push-pull amplifier.

14. Also list its advantages and disadvantages.

15. Also list its practical applications.
UNIT I

1. Write the methods used to determine the substitution rate.
2. Explain the methods used to determine the substitution rate.
3. When is London's Quantum Chemical Derivative used in the substitution rate?
4. Show the London quantum chemical derivative for an electron cell.

UNIT II

3. Write the theory of superspontaneity.
4. When is the London chemical derivative used in development?
5. When are the cooper pairs used?
6. Explain London's Quantum Chemical Derivative can be readily shaped at

Compulsory Question

From each unit, Question No. 1 is compulsory.

Note: Answer five questions in all, selecting one question in each unit. Maximum Marks: 55

Paper I

MATERIAL SCIENCE

5501

Total Pages: 2
UNIT II

11 Explain how various mechanical models utilize for explaining the behavior of polymers.

8. What are ceramic? Discuss from atomic point of view the factors that determine the mechanical properties of ceramics.

UNIT III

11 Discuss qualitatively how BCS theory microscopically explains superconductivity.

6. Why is addition of crosslinking and condensation over temperature range?

4. What is Josephson Junction? What is Josephson effect?
UNIT I

1. What are the main reasons?

2. What are the current trends?

3. What is the role of SF6 in Pelletron accelerators?

UNIT II

4. Explain the basic principle and working of Pelletron accelerators by giving schematic diagram.

5. What is the role of Pelletron accelerators in neutron therapy?

6. What are the main advantages of Pelletron accelerators?

7. Describe the various applications of pelletron accelerators.

8. Explain the basic principle and working of Pelletron accelerators by giving schematic diagram.

UNIT III

9. What is the role of Pelletron accelerators in neutron therapy?

10. What are the main advantages of Pelletron accelerators?

COMPREHENSION QUESTION

From each unit, question No. 1 is compulsory. Select one question from each unit. Attempt five questions in all. Selecting one question maximum marks: 55

Paper II

APPLIED NUCLEAR TECHNOLOGIES

MDM-22

Roll No. ..............................................

Total Pages: 2
UNIT I

9. Describe the classic relative method of NAA. How is it different from method of standardization?

3. Describe the detection limit in NAA.

8. What is radio chemical NAA method? How is it different from instrumental NAA?

UNIT II

4. Give relationship between X-ray emission and atomic number.


UNIT III

5. When is proton microprobe PIXE used?

4. Discuss qualitative and quantitative analysis of PIXE.

3. What do you mean by external PIXE?

4. Describe the limit of detection and accuracy of the analysis.

4. What do you mean by external PIXE?
UNIT-I

2. Explain the primary functions of output unit of a computer system. Give brief description of various output devices.

3. Give the geometrical interpretation of numerical method.

(i) Show that TR (ABC) = TR (BCA).

(ii) Show that Newton-Reduction method has a quadratic convergence.

(iii) \( \frac{Z}{X} + \frac{a}{x} \), \( \sin_1 (\alpha + \beta) \), \( \sin (\beta \sin \alpha) \), \( \sin_3 (\beta \sin \alpha) \)

3. FORTAN expressions

1. (a) Convert the following mathematical expressions into valid FORTRAN expressions.

Computer Question

Note: Attempt five questions in all, selecting one question from each Unit. Question No. 1 is compulsory.

Maximum Marks: 55

Time Allowed: 3 Hours

Paper-III

COMPUTATIONAL PHYSICS

5503 MDP/M-27

Total Pages: 4

Roll No.

---

6. (a) Find the integration of given \( y \) values with respect to \( x \) in the range \( 0, 0.2 \) by Simpson's \( 1/3 \) rule.

---

7. (a) Find the acceleration of the object at \( t = 2 \) sec. Assume a suitable value for \( h. \)
Velocity (m/s): 9.0 9.5 10.0 11.0 12.0 14.7 18.7 19.0
Time (seconds): 1 1.2 1.6 1.8 2.0 2.4 2.2 3.0

Various points in time
The following table gives the velocity of an object at

Second derivative of a function

Using Taylor's expansion derive a formula for computing

UNIT-I

\[
\begin{bmatrix}
2 & 3 & 1 \\
1 & 3 & 2 \\
1 & 2 & 3
\end{bmatrix}
\]

= \lambda

6. (a) The matrices A and B are given by:

\[
\begin{bmatrix}
1 & -1 \\
2 & 1
\end{bmatrix}
\]

\[
\begin{bmatrix}
2 & -1 \\
1 & 2
\end{bmatrix}
\]

7. (a) Obtain the solution of the following set of simultaneous

\[
\begin{bmatrix}
2 & 1 & -1 \\
1 & 1 & 2 \\
5 & -1 & 1
\end{bmatrix}
\]

8. (a) Find the inverse of the matrix A given below:

\[
\begin{bmatrix}
2 & 1 \\
1 & 2
\end{bmatrix}
\]

UNIT-II

y(3) = 10.0, y(x) = 0, y(x) = 1.0 and y(2) = 1.

Method: Newton's Forward difference interpolation formula

\[
x = 1 + (x - 1) + 0.1(x - 1)(x - 2)
\]

UNIT-III

6. (a) Two matrices of order 3 x 3. How arrays and subscripted variables are treated in FORTRAN? Write a FORTRAN program to sum the following sets.

\[
\begin{array}{cccc}
1 & 2 & 3 & 4 \\
2 & 3 & 4 & 5 \\
1 & 2 & 3 & 4
\end{array}
\]

7. (a) How errors of approximation of the propagation

\[
\begin{array}{cccc}
... & + & i & + \\
... & + & i & + \\
... & + & i & + \\
... & + & i & + \\
... & + & i & + \\
\end{array}
\]

8. (a) Discuss the arithmetic of the propagation

\[
\begin{array}{cccc}
1 & 2 & 3 & 4 \\
2 & 3 & 4 & 5 \\
1 & 2 & 3 & 4
\end{array}
\]

\[
\begin{array}{cccc}
... & + & i & + \\
... & + & i & + \\
... & + & i & + \\
... & + & i & + \\
... & + & i & + \\
\end{array}
\]
UNIT II

3. Describe the number of mode and cutoff parameters of optical fibre.

6. Explain the importance of optical fibre.

5. Describe the principle of optical fibre.

UNIT I

3. (d) What are repeaters?
3. (e) What is fibre attenuation?
2. (b) What is mean by numerical aperture?
3. (a) What is acceptance angle and acceptance cone?

Compulsory Question

From each Unit, Question No. 1 is compulsory.

Note: Attempt five questions in all, selecting one question from each unit.

Maximum Marks: 55

Time Allowed: 3 Hours

Paper-I

FIBRE OPTICS

5504

MDDM-22

Total Pages: 2
UNIT-IV

6. (b) Cable selection criteria.

5. (a) Variable apertures.

7. Write a short note on the following:

UNIT-III

6. (b) Cable selection criteria.

5. (a) Fibre cable construction.

6. Write short notes on the following:

UNIT-II


UNIT I

2. Describe PCM modulation and demodulation along with its applications of PCM.

UNIT II

3. What is the classification of signal and systems?

UNIT III

1. What is the channel capacity?
2. Define satellite antenna.
3. What are the features of switching systems?

(6) What are the features of exchange switching systems?

Comprehension Question

From each Unit, Question No. 1 is compulsory.

Note: Attempt five questions in all, selecting one question from each subject.

Maximum Marks: 55

Paper: V

COMMUNICATION SYSTEM

MP/611-22

Total Pages: 2

ROLL NO. 2
UNIT-IV

7. Elaborate the following (in reference to satellite communication)

- Transmission Path
- Ophus
- Station Keeping

8. Explain LAN as computer based communication network.


10. What is FASCHEL? Draw its block diagram and explain its working.
By this method, do you agree that social issues could examine characteristics. Discuss the scientific method of social research and its

UNIT-II

research classify and discuss some types of in 6.10

What do you mean by traditional approaches of social

UNIT-I

Define the Social Research. Also discuss its various types.

Note: Attempt five questions in all, selecting one question from each unit. All questions carry equal marks.

Time Allowed: 3 Hours
Maximum Marks: 80
UNIT-III

Define "Fascism," "Marxism," and "Social Revolution" in the context of their historical development. Discuss their implications on contemporary society.

UNIT-II

6. Discuss the utility of Computer in the Social Research.
7. Define the Social Survey. Also discuss its utility and limitations.

UNIT-I

5. Define "Collective" Also discuss its relevance and importance in

UNIT-L A

4. Define the technique of "Estimation" in economics. What are the

UNIT-L B

3. What is the Research Paper? Examine the various tools and

UNIT-L C

2. Discuss the utility of Computer in the Social Research.
UNIT - IV

7. Define the Social Survey. Also discuss its utility and limitations.

6. Examine Observation as a technique of data collection. Also define its features and limits. 

5. Social Research. Also discuss its features and importance.

UNIT - III

4. Examine Fashion's views on behavioral revolution is Social Science.

3. With the help of an example, explain the technique of Ethnography.

2. Discuss the utility of Computer in the Social Research.

1. What is the Research Paper? Examine the various tools and main aspects of it.

UNIT - V

9. Define the technique of Ethnography and its analysis. 

8. Discuss the utility of Computer in the Social Research.

7. Define the Social Survey. Also discuss its utility and limitations.

6. Examine Observation as a technique of data collection. Also define its features and limits. 

5. Social Research. Also discuss its features and importance.

UNIT - IV

7. Define the Social Survey. Also discuss its utility and limitations.

6. Examine Observation as a technique of data collection. Also define its features and limits. 

5. Social Research. Also discuss its features and importance.
Behaviour and Management

1. Which is the relationship between Organisational
   Behaviour?

2. Why is it difficult to build the attitude?
   (Groups)

3. Differentiate between accidental and purposeful
   (Why is planning a parametric function of Management)

I. Answer the following in brief:

   10 x 4 = 40

   Compulsory Question (All Mark 60)

   Note: Attempt five questions in all. Question No. 1 is
   compulsory.

   Time Allowed: 3 Hours

   Maximum Marks: 80

   Paper-MC-501

   ORGANISATIONAL BEHAVIOUR

   MANAGEMENT CONCEPTS AND

   MDE/M-22

   Total Pages: 4
Write short notes on the following:

1. Compulsory Question (10 marks)

Remind students to answer four compulsory questions from the four questions given.

Note: Attempt the questions in all Question No. 1 is 10 × 4 = 40 marks.

Time Allowed: 3 hours

Paper-MC 502

BUSINESS ENVIRONMENT

4028 MDE/M-22

Total Pages: 3

ROLL NO.
8. Comment upon the incentives given to NRIs for investment.

7. Write a detailed note on the role of World Bank in international trade. How it helps in case of domestic business?

6. Explain the PD, any norms to India. Which are the prohibited sectors of PD?

5. Discuss the impact of regulatory framework on industrial

4. List the problems of SLS.


2. Objectives of Environmental Protection Act

1. Objectives of Foreign Exchange Management Act

10. Give the recent amendments made to this Act.

10. What rights are given to the citizens in NR Act?

10. Why there was need of New Industrial Policy?

10. Discuss the interaction matrix of these factors.
What is Managerial Economics?

1. Explain the role of Managerial Economics in a firm.
2. What is Demand Forecasting?
3. Why do Luxuries items have highly elastic demands?
4. What is Water Diamond Paradox?

Note: Answer five questions in all Questions No. 1 is

Maximum Marks: 80

Paper-MC-03

MANAGERIAL ECONOMICS

MDE/M-22

Total Pages: 3
1. Explain the causes and effects of inflation. Also give examples of the effects of inflation.
2. Discuss the meaning and various phases of a business cycle.
3. Discuss the various methods of demand forecasting.
4. Explain the various types of elasticity of demand. Also discuss the uses of elasticity of demand in managerial development.
5. Explain the various objectives of firms. Do they contribute towards sustainable development? What is sustainability? Explain the meaning, characteristics, and scope of sustainable development.
6. Explain the price determination in monopoly.
7. Explain the nature of elasticity of demand.
8. Explain the meaning of consumer surplus.
9. Explain the meaning of producer surplus.
10. Explain the various methods of determining optimal production.
1. Describe the following:

(1) Poisson distribution

(2) Sample size

(3) Difference between the skewness and kurtosis

(4) Linear regression

(5) Descriptive statistics

(6) Statistical hypothesis test

Note: Attempt all questions in all questions. Total marks: 80

Time Allowed: 3 Hours

Paper: CIC-504

ADVANCED STATISTICS

4030

Total Pages: 1
Suppose that in a regression equation, two slope parameters are significant and two are non-sig. One of the parameters is the significance of simple regression slope parameters. The significance of the regression coefficient must be examined in more detail.

When is the probability that at least 200 of them will pass the company's pills 20% of the managers in control in the program? In the program will successfully complete the program. If a larger percentage of the managers who enroll in a special training

2.5 The sample before the first defective item is found.

Ten percent of the items produced at plant A are defective.

(a) By discrete.

(b) Efficiency of sampling methods.

(c) Power of a test statistic.
5. Explain the following:

6. What do you mean by statistical estimation? Describe the
on whether the buyer is foreign or domestic.
Is there evidence of a dependence of institutional buying
institution
Individual
Foreign
Domestic

7. The following information describes recent purchases of U.S.

8. Why caution must be exercised in interpreting the

9. Standard error of estimate:

(ii) Mean square error:

(ii) Multicollinearity:

10. Stocks by individual or institutions as well as domestic or

(r) Foreign

(significance of single reflection scope parameters)
1. Write short notes on the following:

Compulsory Question (Marks: 60)

Note: Question No. 1 is compulsory and each of it carries 10 marks each.

Time allowed: 3 Hours

[Maximun Marks: 80]

PAPER-MC-505

MARKETING MANAGEMENT

4031

MDE/M-22

ROLL NO. 3

TOTAL PAGES: 3
10 Why do marketers study consumer decision making?

6. Why should marketers study consumer decision making?

10 Suitable examples. Describe outcomes of product life cycle. Discuss climatic conditions recognized in majority.

5. What marketing strategies are recognized in majority.

10 How is final price determined?

4. Under what circumstances, price variation is warranted.

2. Why is different orientation required in case of different organizations.

(x) Matrix structure marketing organization.

(ix) Market intelligence.

(viii) Labelling challenges.

(vii) Intermittent allowances.

(vi) Distribution channels.

(v) Examples of successful direct to consumer.

(iv) Trade oriented sales promotion.

3. How will the strategic plan be executed in India?

10 Developing country like India.

2. What are the prerequisites to success in international marketing? When are the prerequisites to success in international marketing in comparison to domestic marketing?

10 Sustainable marketing precedence these days?
1. Write short notes on the following:

(a) Explain the Responsibility Centre.
(b) Discuss main aspects of Management Information System.
(c) Discuss role of Management Accountant.
(d) Explain methods of Reporting.

2. From the following information calculate Labour Variance:

<table>
<thead>
<tr>
<th>Standard</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rate paid : 8.000</td>
<td>8.500</td>
</tr>
<tr>
<td>Hours</td>
<td>2,000</td>
</tr>
<tr>
<td>Output</td>
<td>1,200 Lines</td>
</tr>
<tr>
<td>Time Taken : 30 Hours</td>
<td>Time Taken : 40 Hours</td>
</tr>
</tbody>
</table>

8. When additional lines would be necessary to increase the profit by $25,000, the required sales volume in terms of $25,000.
(a) Break-even point in units:

Fixed Expenses = 2,000

Variable Expense = 7 per unit

Selling price = 12 per unit

The following information is given:

Break-even point in units

When is price level adjustment accounted for?

When is zero-base budgeting followed? How is it different from traditional budgeting system? State process of zero-base budgeting.

Budgeting

5.

4.

3.

2.

1.

Discuss the reporting needs at middle level management and operating level management.

Describe the requirements for installing management accounting system

Explain tools and techniques of management accounting

Explain quality costing

Describe controlling and investing activities in cash flow

Explain composite break-even point

Explain interest coverage ratio

State essentials of budgeting
Suggest certain widely used methods of reconditioning.

(iii) Differentiate between Induction, Orientation and Socialization.

1. Write short notes on the following:
   - 6 x 4 = 24

(iii) Compulsory question (Choose any one)

Note: Attempt five questions in all. Question No. 1 is compulsory.

Maximum Marks: 80

Time Allowed: 3 Hours

PAPER-MC-201

HUMAN RESOURCE MANAGEMENT

4680

MDM-22

Total Pages: 4
effective training and development programs. Take into account the needs and interests of your employees and design training programs that meet these needs. This will help to improve the skills and knowledge of your employees and ultimately benefit your organization. As an HR Manager, you need to be familiar with various training and development methods. Know about the different types of training such as classroom training, e-learning, and on-the-job training. Identify the learning needs of your employees and design training programs that address these needs. This will help to improve the performance of your employees and ultimately benefit your organization. As an HR Manager, you need to be familiar with various performance management and appraisal methods. Know about the different types of performance management and appraisal methods such as self-evaluation, peer evaluation, and 360-degree feedback. Identify the performance management and appraisal needs of your employees and design performance management and appraisal programs that meet these needs. This will help to improve the performance of your employees and ultimately benefit your organization.
I. Answer the following in brief:

Compulsory Question (All answers)

Note: Attempt five questions in all. Question No. 1 is compulsory.

Maximum Marks: 80

Time Allowed: 3 Hours

PAPER-MC-202

INTERNATIONAL BUSINESS ENVIRONMENT

4681

MEDM-22

Roll No.

Total Pages: 3
Discuss the contribution of WTO in expansion of World Trade. Are really developing countries benefited from WTO?

WTO.

Discuss different types of technology transfer in developing countries. Why is technology transfer important for the development of an economy?

Technology transfer.

What factors are considered while expatriating your business across the national borders?

Expatiation.

Why is EU the most successful regional economic group?

Why is EU.

Discuss two methods of foreign exchange rate.

Method.

What is the sensitive list in SAFTA?

Sensitive list.
(a) Competitive Environment
(b) Customer Environment
(c) Price and Analysis
1. Write short notes on the following:

Compulsory Question (20 marks)

Note: Attempt five questions in all, Question No. 1 is compulsory. Attempt four questions out of remaining seven questions carrying 14 marks each.

Maximum Marks: 80

Time Allowed: 3 Hours

Paper: MC-203

STRATEGIC MARKETING

4682

ME/M-22

Total Pages: 3

Roll No.
1. Explain the importance of marketing to business strategy and performance.

2. Discuss the relationship between business strategy and brand positioning.

3. Discuss the marketing implications of business strategy and brand positioning at the corporate level.

4. Explain the components of external analysis. Give sources of information related to these components.

5. In what types of market and product conditions, companies go for growth strategies? Explain with the examples for Indian startups.

6. Explain the importance variables to be considered in the calculation of psychological segmentation of Indian Youth. Explain the challenges faced in this regard.

7. Discuss the relationship between business strategy and market positioning.

8. Why evaluation of marketing strategies is necessary?
Discuss types of working capital.

(c) Explain retained earnings as a source of finance.

(d) Explain capital asset pricing model.

(e) Discuss the significance of financial management.

(f) Attempt the following questions in order:

1. Calculate internal rate of return.

Year 1: $20,000. Year 2: $30,000. Year 3: $30,000, Year 4: $15,000.

Initial Investment: $60,000

Time Allowed: 3 Hours

Maximum Marks: 80

FINANCIAL MANAGEMENT AND POLICY

4683

PAPER-MC-204

TOTAL PAGES: 4

ROLL NO.:

Note: Attempt five questions in all. Question No. 1 is compulsory. Attempt remaining four questions on compulsory only.

8. Initial Investment: $60,000.
1. Discuss the factors which influence the size of receivables.

2. What do you understand by receivables management?

3. Explain the methods used for assessing working capital.


5. A company issued 1000 7% preference shares of \$100 each. Also, 5-year convertible debentures of \$100 each at a premium of 10% receivable after 5 years at par. Calculate the cost of preference capital.

6. Discuss the need and scope of financial management.

7. Difference if the market price of equity share is above \$150.

8. Calculate the cost of equity capital. Why it is made any years and expected to maintain the same in future also.

9. 20% dividend to equity shareholders for the past 5 years and 10% dividend to preference shareholders. The company has been paying out a dividend of 10%. The company has been paying out a dividend of 10%.

10. A company issued 1000 equity shares of \$100 each.

11. Explain sensitivity analysis method for risk.

12. Which factors are considered while investing in marketable securities?
(c) Give journal entries for the pooling of interest method.

(d) Pass purchases and business purchased.

(e) Mention specific method.

(f) Deferred tax assets.

8. (a) Define the purchase consideration per accounting standard.

(b) Differentiate between the options: Pooling method and Purchase method.

(c) Explain circumstances in which each is suitable.

9. Define the concept of HR. Explain the different approaches for the valuation of human resources.

Answer the following questions:

Corporate Accounting

PAPER-MC-205

Maximum Marks: 80

Time allowed: 3 Hours

Tuition fee: 10,000 /-

4684

MED/M-22

Total Pages: 4

Page No.
RS. 30 per share

On allotment

RS. 30 per share

On application

To be as follows:

100 each at a premium of RS. 10 per share. The paid-up was

5. C. C. Ltd. allotted to the public 20,000 equity shares of RS.

that influence the valuation of shares.

Explain the need for valuation of shares. Also explain the factors

(i) Social Accounting

(ii) Financial

b. Segmental Accounting

What is the segment?

3. Write a note on the following:

How will you calculate such profits?

(ii) Cost of Control and Minority Interest
Marketing mix?

Marketing mix refers to the product component of management. With suitable examples, explain how supply chain management affects the marketing mix.

1. Write short notes on the following:

   Compulsory Question (5 marks)

   Write short notes on the following:

   Use each of the seven questions to write 1 mark each. The remaining seven questions carry 1 mark each. You are to attempt any four questions out of the seven questions. Marks for each question are 1 mark. You are to attempt any four questions out of the seven questions. Marks for each question are 1 mark. You are to attempt any four questions out of the seven questions. Marks for each question are 1 mark. You are to attempt any four questions out of the seven questions. Marks for each question are 1 mark. You are to attempt any four questions out of the seven questions. Marks for each question are 1 mark. You are to attempt any four questions out of the seven questions. Marks for each question are 1 mark.

   Note: Question No. 1 is compulsory and each of the remaining questions carry 1 mark each. Time allowed: 2 hours.

   Total Marks: 22
1. Why is information now considered an important component of SCM? Explain the applications of IFP in Supply Chain Management. How is it related to Total Cost Concept?

2. Supply Chain Management is essentially Coordination & Integration. Explain this statement with the help of suitable examples.

3. What are the various types of warehouses? What is the significance of warehouses in inventory handling?

4. Write short notes on the following:
   (a) Documentation of SCM
   (b) Multi-modal transportation
   (c) ABC analysis

5. What are the steps in Order Processing?
1. Answer the following in brief:

**Compulsory Question (Answer Both)**

Note: Attempt five questions in all Question No. 1.

Maximum Marks: 80

Time Allowed: 3 Hours

**Paper-MC-14**

**CORPORATE GOVERNANCE**

5699

Mid/M-22

Roll No. ____________________________

Total Pages: 3
Governing in this regard, the public sector? Discuss the guidelines on Corporate Governance.

6. Why is the importance of Corporate Governance?

How can the board of directors improve Corporate Governance?

5. When is the composition of board of directors?

The significance of Corporate disclosures practices.

4. What are disclosures in Corporate Governance?

Discuss the statement in light of present scenario.

3. Corporate Governance is an evolutionary process. Justify.

Governing structure, the characteristics of Corporate Governance.

2. What are the most common types of Corporate Governance?

Funds

1. (a) Discuss the role of Corporate Governance in India.

Shall India go for Corporatisation of Agriculture?

7. What are the characteristics of Corporate Governance in India?

What are the challenges of Corporate Governance?

8. What are the characteristics of Deposition System in India?

How can Corporate Governance resolve the issues?

4. If you are a member of the board of directors, discuss the guidelines on Corporate Governance.
Section A

1. Explain the following terms in brief:

(a) System Software

(b) Information Technology

(c) Peripheral Devices

(d) Operating System

Note: Attempt five questions in all. Question No. 1 is compulsory. Answer any four questions from the remaining seven questions. Time allowed: 3 hours. Maximum Marks: 50

Section B

2. Computer Application to Business

ID/M-22
10. What is Computer? What are advantages and disadvantages of computer?

8. What is Spreadsheet? Explain cell addressing. Either MS-Excel or charting Tool.

6. What is E-Commerce? Discuss different applications of E-commerce.

5. What is Local Area Network? Discuss different topologies used in Local Area Network.

4. When are Store devices? Explain working of Mouse.


2. What is Change Case in MS-Word.

1. Application Software.
Attempt the following questions in order:

1. Attempt the following questions in order:

   **Compulsory Question (All marks)**

   [Q1] 10 marks each

   Question: Discuss the nature of financial management.

   Note: Question No. 1 is compulsory and each of it carries 10 marks each.

   Maximum Marks: 80

   Time Allowed: 3 Hours

   Paper: MC-602

   Financial Management and Policy

   425

   Roll No. 3

   Total Pages: 3
Describe the expansion techniques used for corporate
management.

2. Why is financial management? Discuss scope of financial
management.

(x) Explain working capital schedule.

(ix) Discuss short-term problems.

(viii) Why are loans of misc./inc.?

(vii) Describe need of corporate financing.

(vi) Explain sensitivity analysis method for risk.

(v) What do you mean by marketable securities?
1. Write short notes on the following:

**Compulsory Question (Answer any 5)**

- Fundamental analysis
- Technical analysis
- Secondary market
- Risk analysis
- Security research

**Note:** Attempt the questions in all Question No. 1 is

Maximum Marks: 80

Paper-MC-603

MANAGEMENT

SECURITY ANALYSIS AND PORTFOLIO

NDP/M-22

Total Pages: 3

Roll No.: 3
3. Explain the valuation of the following:

- Bonds
- Equity Shares

4. Explain the listing procedure of securities in stock exchange.

5. Distinguish between primary and secondary market.

8. Write a detailed note on Fama decomposition model of portfolio performance evaluation.

6. What is CAPM? How is it used in identifying the overpriced and underpriced securities?

(x) Portfolios

(x) Options

(4) Share optimization solution

(4) Single index
1. Write short answer on the following:

(a) What do you mean by voyage account?
(b) Explain deductive approach of accounting theory.

Standards.

(c) Explain any four characteristics of accounting.

10 = 4 + 6

Compulsory Question (Incomplete)

Note: Question No. 1 is compulsory and each of the remaining seven questions carry 10 marks. You are to attempt any four questions out of seven with maximum 80 marks. Time Allowed: 3 Hours.

PAPER—MC-604

THEORY

HIGHER ACCOUNTING AND ACCOUNTING

MP&G-M-27

Total Pages: 3

Roll No. 

1/27
8. Explain in detail various Current Requirements for Corporate Reporting.


6. Explain Indian Accounting Standards AS-6 and AS-7

5. Describe the various methods of valuation of assets.

4. Explain various journal entries in the books of lessor and lessee in case of a financial lease.

3. (b) Define absorption and recognition.

2. What do you mean by accounting theory? Explain the process of accounting theory formulation.

1. (a) What do you understand by Harmonization?
I. Answer the following in brief:

Complementary Question (allotted 40 marks)

Note: Attempt five questions in all. Question No. 1 is compulsory.

Time Allowed: 3 Hours

Maximum Marks: 80

Paper: NC-605

ADVERTISING AND Sales MANAGEMENT

10. Discuss different methods of Sales force performance evaluation. Which method is comparatively better in your opinion?
0. How are sales forecasts, sales quotes, and sales budgets determined? Also discuss the relationship between sales forecasting and sales budgeting.

1. Selling is the backbone of any organization. Discuss why selling is essential for an organization.

2. There are many economic and social aspects of advertising. Explain the slogan in detail.

3. Explain the criteria of deciding sales forecasts.

4. Discuss the functions of sales management.

5. Discuss the importance of selling in marketing.

6. Explain the steps involved in the process of control.

7. Explain the role of media planning and scheduling in estimating advertising.

8. Discuss the performance of the advertising department.

9. Why do organizations prefer to hire advertising agencies?
(d) What is a hypothesis?

(c) When a researcher requires observation method?

(b) When is a Focus Group Interview?

(a) What is Qualitative Research?

1. Write short notes on the following:

(a) Compulsory Question (maximum 10 marks)

Each of the remaining seven questions carrying 10 marks. You are to answer any four questions only. Each question is compulsory and each counts 10 marks. Maximum Marks : 80

Time Allowed: 3 Hours

PAPER-MC-606

MARKETING RESEARCH

4129 MDP/M-22

Total Pages: 3

Roll No.
10 

F-90:-

3. When are the steps involved in the Marketing Research process?

3. How can a company measure advertising effectiveness?

4. What is the purpose of A/V?

5. What is a nominal scale?

6. What is a Chi-square test?

7. What is the appropriate test of Chi-square test?

8. What is a recall test?

9. What is univariate analysis?

10. What are the considerations involved in selecting data collecting the data?

10. What are the types of scale? Discuss their suitability for...
(c) State various risks faced by a buyer/consumer of a service.

Suggest measures to reduce vulnerability in a service.

(a) State the importance of services marketing.

1. Write short notes on the following:

- Paper: 3 Hours
- Maximum Marks: 80

Repeat

SERVICES MARKETING

MDGM-22

4130

Roll No. 4

Total Pages: 4
1. Describe the meaning and distinguishing characteristics of a service.

2. What is a Service Blueprint?

3. Explain empathy as a dimension of service quality.

4. Explain the GAPS model of service quality. Also suggest measures to overcome the various gaps.

5. Explain the relevance of relationship marketing. Critically examine the various customer retention strategies.

6. Discuss the problems involved in promotion of a service.

7. Discuss the main elements of communication mix for hospital services.

8. Discuss the benefits of customer participation in a service.

9. Also discuss the various strategies available for enhancing customer participation in services.

10. ...
(c) Draw the curve of HR needs which are shaping componentry organisations in India.

(b) Figure out various type of interviews.

(a) Share the reasons to be case of while declining componentry organisations.

7. Write short notes on the following:

Complementary Questions (E-mail)

1. I have read the following passage: "..."

Note: Answer the questions in all Questions No. 1.

Time Allowed: 3 Hours
Maximum Marks: 80
Paper-MC-608

HUMAN RESOURCE MANAGEMENT 4131

MDM-22

Total Pages: 4

Roll No.

8. Discuss the specific features of trade union movement in India.

Also draw high on their major functions.


Employees overcome such challenges.
Describe the process to formulate HR policy in organizations.

Discuss the various mechanisms for settlement of industrial disputes as stipulated under Industrial Disputes Act, 1947.

Describe the various mechanisms for settlement of industrial disputes.

Mention the various functions of HRMS.

Determine the various sources of HRIS.

Briefly state widely used methods of job design.

Briefly state the main objectives of the HRD program.

Describe the various methods used to evaluate the jobs.

Discuss the various principles of effective job evaluation program.

Differentiate between job evaluation and job analysis.

Describe the mechanism of providing workers participation

State the mechanisms of providing workers participation

Differentiate between Traditional HRM and Strategic

Discuss various aspects of selection tests.

In India

Trace the major milestones in evolution of HRM

From the chart on major milestones in evolution of HRM

In management

HRM
Entrepreneurship Development

MDM/M-22

TOTAL PAGES: 3
1. Describe the role of small industries development bank in India.

2. What do you mean by E-commerce?

3. Describe important factors affecting Entrepreneurial growth in developing countries like India.

4. Describe various steps involved in the process of starting a small business in India.

5. Critically explain various methods of identification of supply in potential areas of growth.

6. Describe various important management aspects for maintaining business operations.

7. What are the different types of entrepreneurial activities?

8. What do you mean by E-commerce?

9. (a) Cost Reduction

   (b) Price Reduction

   (c) Entrepreneurship development programs

10. (i) Human relations and performance

    (ii) Need for project preparation

    (iii) Demand Forecasting

    (iv) Need for opportunity identification
(a) Define Multiple regression and discuss its use in Business.
(b) In a binomial distribution, \( P(X = 0.12) = 0.6 \). Compute \( P(X = 0.21) \). 
(c) Why is there a local index? 

**Compulsory Question**

Remainder live questions.

Note: Attempt live questions in all question No. I

Maximum Marks: 80

Paper-MC206

BUSINESS STATISTICS

4685 MDP/M-22

Total Pages: 4
in the theory of probability.

(b) The probability that a component will get a phosphine component each case.

2. Suppose 200 people received $20.00 each, exceeding an average income of $12.00. What was the lowest income among the people who received more than $20.00 and only 5% had income standard deviation $20.00. Show that the group of first group had normally distributed with mean $72.00 per month and

5. The income of a group of 10,000 persons was found to be

6. Suppose 5 white balls and 8 red balls. If 3 white and 2 red balls in the first drawing will give 3 white and 2 red balls in the second drawing before the second trial. Find the probability that the balls are not replaced before the second trial and (ii) the balls are replaced after the second trial and (iii) the balls are made such that the balls are drawn of 3 balls are made such that the balls are

7. Describe the Chain Base Index.

<table>
<thead>
<tr>
<th>Price</th>
<th>Exclusive</th>
<th>Price</th>
<th>Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>150</td>
<td>25</td>
<td>100</td>
<td>E</td>
</tr>
<tr>
<td>90</td>
<td>3</td>
<td>50</td>
<td>D</td>
</tr>
<tr>
<td>90</td>
<td>3</td>
<td>50</td>
<td>C</td>
</tr>
<tr>
<td>96</td>
<td>12</td>
<td>120</td>
<td>B</td>
</tr>
<tr>
<td>120</td>
<td>10</td>
<td>80</td>
<td>A</td>
</tr>
</tbody>
</table>

(b) Calculate Fisher's Ideal Index from the following data and

3. Calculate the following from the following data and

- value of $x^2$ for $x^2 = 22.72$ and $x = 140$ cases,
- multiple regression of $y$ on $x_2$ and $x_2$ and estimate the
- Multiple and Partial Correlation Coefficient $r_{23}$ and $r_{13}$.

4. Obtain:

\[ x_1 = 70, x_2 = 22, x_3 = 160 \]

\[ r_{12} = 0.8, r_{13} = 0.5, r_{23} = 0.3 \]

5. Write a short note on Positive Shrinkage.

6. Explain the fundamental concept of probability.
(c) Explain the concept of Cloud Computing.

(d) Describe the Business Applications of E-commerce.

(e) Define the concept of Viral Marketing in brief.

(f) What are the advantages of Web-based advertising?

(g) Elaborate the term Electronic Commerce.

I. Write short notes on the following:

Compulsory Question (Any 3)

Note: Attempt five questions in all Question No. 1 is compulsory.

Time Allowed: 3 Hours

Paper: MC 401

IT AND E-COMMERCE

5686

Midterm-22

Total Pages: 3

Roll No. ..........................
4. Explain in detail the concept and working of E-commerce.

5. Describe the role of search engines in advertising and their advantages and disadvantages.

6. Describe the concept of E-retailing in detail. What are the advantages of it? Also discuss its limitations.

7. Elaborate the concept of search engine optimization.


9. For Search Engine Optimization, what are the techniques which can be employed?

10. What are Online Funds? Explain.

11. Describe in detail different business models in E-commerce. Also explain their pros and cons.

12. Describe the means and components of both. Also state different security issues in E-commerce.

13. Elaborate the idea of Online Fund Transfer. Also explain E-banking. How does E-banking operate? Also explain the concept of Payment System. Also describe in detail the concept of Electronic Fund Transfer.
UNIT-I

1. Attempt short notes in about 100-150 words on the

2. Critically examine Wordsworth's views on Diction.

3. Examine in detail Wordsworth's statement, "poetry is a

spontaneous overflow of powerful emotions."

UNIT-II

4. Define Author according to Denham.

5. Arnold's views on Keats.


7. Qualities of a poet according to Wordsworth.

Critical Theory (Part II)

11473

Mid Term-22

Roll No. 2

Total Pages: 2
deconstructionist criticism?

9. What according to Abrams are the main drawbacks of

The Object of Study:

8. Write a critical assessment of Saussure's views expressed in

UNIT IV

Elaborate Eltis theory of impersonality.

7. The reasons for her disapproval of them.

pullying forth her ideas. Identify these novels and assess

Virginia Woolf is quite critical of certain novels while the

UNIT III

"Study of Poetry"

6. What is the critical position taken by Arnold in his essay

5. What is Arnold's judgement about John Keats as a poet

UNIT II
Compulsory Question (All Questions) 10 Marks

Note: Question No. 1 is compulsory and each of it carries 4 marks. You are to attempt any four questions out of the remaining seven questions carrying 14 marks each.

Time Allowed: 3 Hours

Maximum Marks: 80
2. Explain the New Financial Instruments in Security market in India. What are the SEBI guidelines for placement of such instruments?

3. Explain the role, management and listing procedure of Securities in Bombay Stock Exchange in India.

4. What are the share price indices? Highlight the need and importance.

5. Write a detailed note on NSDL.


7. Explain the instruments through which funds are raised from International Markets and discuss the SEBI guidelines for the same.

8. What is the present status of FDI in India? What is the impact of FDI on India's economic growth and development?
(d) What are the benefits of outsourcing?

(e) State the purpose of sales organization.

(f) Explain the meaning and utility of sales management.

(g) State the objectives of sales management.

1. Answer the following:

Compulsory Question (Affix Question)

Time allowed: 3 Hours

Maximum Marks: 6×4=24

Note: Attempt five questions in all. Question No. 1

SALES MANAGEMENT

Roll No. 56/2
1. Explain the various steps involved in the process of implementing a Sales Training Program.

2. Discuss the impact of technological advancements on the functions of Sales Management. Explain its functions. Also express the challenges in the management of Sales.

3. Discuss different approaches and process of Sales Planning.

4. Explain the meaning, importance and process of Preparing Sales Budget.

5. Discuss the various steps involved in the process of Evaluation of Sales Force Performance. Also describe the problems involved in the evaluation process.

6. Discuss the various steps involved in the process of interview of a Sales person. Also explain the importance of selection of a Sales person.
(d) State the importance of maintaining customers for service.

(e) What is zone of tolerance?

(f) Explain service as a process.

(g) Write short notes on the following:

Compulsory Question (4 marks)  

Note: Attempt five questions out of remaining seven questions.

Maximum Marks: 80

Time Allowed: 3 Hours

Paper-MC-409

SERVICES MARKETING

5694

Midterm

Total Pages: 3
4. Explain the various factors influencing customer perception of service quality.

5. Discuss the various approaches developed for service delivery, highlighting an appropriate approach for a chain of restaurants.

6. Explain the various strategies that can be used for retaining and retaining customer retention strategies that can be used by an online service provider.

7. Discuss the challenges involved in providing service.

8. Explain the various stakeholders involved in communication mix.

9. Discuss various elements of service. Also discuss various elements of service.
(a) State importance of retaining customers for service

(b) Explain service as a process.

(c) What is Zone of tolerance?

(d) State the implications of instilling quality feature of a service.

(e) Write short notes on the following:

7. Write short notes on the following:

 Competency Question (Abridged form)

Q 1: Discuss the role of service quality in determining customer satisfaction.

Q 2: Explain the concept of productivity in services.

Q 3: Discuss the importance of interpersonal skills in service provision.

Q 4: Explain the role of technology in enhancing service quality.

Q 5: Discuss the impact of service failures on customer retention.

Q 6: Explain the concept of service encounters and their impact on customer satisfaction.

Q 7: Discuss the role of service recovery in managing customer complaints.

Note: Attempt five questions in all. Question No. 1 is compulsory. Attempt your questions out of remaining seven questions.

Maximum Marks: 80

Time Allowed: 3 Hours

Paper-MC-49

SERVICES MARKETING

5694

MGM-22

Total Pages: 3
5. Discuss the various approaches available for service delivery. Suggest an appropriate approach for each of the service delivery channels.

6. Explain the various strategies that can be used by an online retailer to manage customer retention strategies that can be used by an online retailer.

7. Discuss the various factors influencing customer service expectations of services. Also, state the utility of some of these factors.

8. Discuss the challenges involved in providing service communication mix. Also, explain the different pricing approaches and strategies.

9. Explain the various problems involved in communication with customers.

10. Discuss the benefits of customer participation in the organization.
Accounting

Question 1

"The past is history, the future is planning. Explain".

(a) What are objectives of management accounting?

(b) Explain three tools each of accounting, business and financial.

(c) Explain the following topics in up to one and a half page length each:

I. Complementary Question (20 marks)

You are to attempt any four questions out of seven questions carrying 10 marks each.

Maximum Marks : 80

Time Allowed : 3 Hours

Paper : MCT-201

Management Accounting and Financial

MDE/M-22

24586

Roll No. .................

Total Pages : 5
By issuing Equity Shares only.

The company plans the following financing alternatives:

Further 7,3,00,000 for expansion-cum-modernisation scheme.

10,000,000 at Nil discount to raise Rs. 5,00,000

Rajesh Ltd. has Equity Share Capital of Rs. 5,00,000.

4. Explain the difference between Divisional and Group accounting.

5. Explain the meaning of relationship between Dividend and value of a firm.

6. Explain the nature of relationship between Dividend and Retained Earnings.

7. Define Target costing and its objectives.

8. Explain advantages of Activity Based Accounting.

9. Discuss the essentials of a good budgetary control system.

10. In the context, explain this statement:

Management accounting is the presentation of accounting information in such a way as to help the management in decision making.

7. Explain the concept of project management.

8. What is community volunteering & why is it important?

9. What are the main principles of the cycle of change?

10. Discuss various advantages and limitations of Value Chain Analysis.

11. What are the primary activities involved in the Value Chain Analysis?

12. What is the meaning of Value Chain analysis?

13. What are the main principles of the cycle of change?

14. Discuss the objectives of transfer pricing.

15. Explain with examples the steps in activity-based costing.

16. Describe the indicators of divisional performance.

17. What are the broad areas of Corporate restructuring?

18. What are the broad areas of Corporate restructuring?

19. What is the difference between the Water's divided model and the Jordan's Model?


21. Discuss various advantages and limitations of Value Chain Analysis.

22. What are the primary activities involved in the Value Chain Analysis?

23. What is the meaning of Value Chain analysis?

24. What are the main principles of the cycle of change?

25. Discuss the objectives of transfer pricing.

26. Explain with examples the steps in activity-based costing.

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33. What are the primary activities involved in the Value Chain Analysis?

34. What is the meaning of Value Chain analysis?

35. What are the main principles of the cycle of change?

36. Discuss the objectives of transfer pricing.

37. Explain with examples the steps in activity-based costing.

38. Describe the indicators of divisional performance.

39. What are the broad areas of Corporate restructuring?

40. What are the broad areas of Corporate restructuring?
1. Answer the following in brief:

L) Compulsory Question (20 marks)

Note: Attempt five questions in all. Question No. I is compulsory.

Maximum Marks: 80

Time Allowed: 3 hours

PAPER-202

INTERATIONAL BUSINESS ENVIRONMENT

2487

MDE/M-22

Total Pages: 4

ROLL NO. ........................................

8. Why are the determinants of foreign exchange rates ?

Regional Economic Grouping like EU and ASEAN.

10. Why is NAFTA less successful than ASEAN?

Member countries are required to make it a success.

Member countries are notified if a win-win situation for all.

Dress the major provisions of GATT on which member.

Discuss the principles and policies of ASEAN which make

for many other countries as well.

Discuss the contribution of WTO in expansion of world

Trade. Also discuss how developing countries benefited

from the policies of WTO.

Discuss the contribution of WTO to the development of

States with suitable examples.

India has become one of the most attractive destinations

for Foreign Direct Investment (FDI) in recent past. Explain

for Foreign Direct Investment (FDI) in recent past. Explain

management.

Management.

Protectionist with non-tariff barriers.

Non-protective with free trade agreements.

What is the impact of free trade agreements?

What are International Commercial Agreements made?

World Bank.

IMF.

UNCAD.

WTO.

Where is the Headquarter of the following:
Comprehensive Question (Mark 4)

1. Define applied research.

2. Discuss the importance of having a good hypothesis.

3. When are the sampling errors?

4. What is the survey method?

Statistical Analysis
Research Methodology

Paper-MTI-203

Time Allowed: 3 Hours

Maximum Marks: 80

Roll No. 4

Note: Attempt five questions in all selecting one question from 1 to 10.

1. What is the significance of the claim made by the area sales manager of the 0.05 level of significance test conducted on the area sales manager's claim?

2. Explain the steps involved in the use of this test.

3. What is the correlation under what conditions is applicable?

4. When do you mean by report in research? Explain various steps in writing the report.

5. What is the formula used to calculate the mean?

6. What is your understanding of the mean?

7. Describe the process of conducting a survey.

8. What is the process of sampling in research?
Test whether two samples taken from two random populations have the same variance.

Plot 2 (population 2): 5.6 5.9 5.6 5.7 5.8 5.9 5.9 6.0 5.5 5.7 5.9
Plot 1 (population 1): 6.2 5.7 6.5 6.5 5.8 5.8 5.7 6.0 6.9 5.8

The following data present the yields in grams of common 10 pubs is 4 000 hours.

Can we accept the hypothesis that the average life time of 4.0
4.4 4.3 4.6 3.9 3.8 5.2 1.4 4.6 4.6
the difference of two populations. Sign the various types. Report the

1. What is the hypothesis? Discuss its various types. Report the

2. What precaution should be taken by a researcher in the

3. Define the Kruskal-Wallis H test.

4. Discuss the test of homogeneity.
1. Write short notes on the following:

- Challenges associated with DB marketing

Compulsory Question (All attempts)

Select four questions from the remaining seven questions. Select four questions in all Question No.1.

Note: Attempt five questions in all Question No.1.

Maximum Marks: 80

Time Allowed: 3 Hours

Paper-MCTI-204

ONLINE MARKETING

24589 MDE/M-22

Total Pages: 3
The impact of digital marketing on business has been revolutionary. Modern-day businesses today have to keep up with the changing trends of technology.

How do consumers behave differently when using online platforms? Which of these behaviors is more efficient in online buying?

1. How are Online marketing initiatives performed when online platforms are used?
2. (i) The implications for brick and mortar businesses on account of e-commerce
3. (ii) Example of Presence Online in Online marketing
4. (iii) Role of Chunking in Online marketing
5. (iv) Brand Familiarity through Chunking
6. (v) Customer Engagement through Social media
7. (vi) e-Business
8. (vii) Workable model for e-Business
Compulsory Question (All 4 Questions are Compulsory)

1. Attempt the following questions in brief:

(i) What is Value chain integration in E-Commerce?

(ii) Write two applications of E-Commerce.

(iii) What are two ways to payment transfer using E-Payment system?

(iv) What is the benefit of using E-Payment system?

2. [Maximum Marks: 40]

Note: Attempt five questions in all. Question No. 1 is compulsory.

Time Allowed: 3 Hours
2. Define E-commerce and its impact on Business

3. Explain concept of E-payment system. Emphasise on models.

4. Discuss concept of Cyberspace in E-payment system.

5. Discuss E-commerce in Corporate Purchasing.

6. Explain Obstacles in adopting E-commerce Applications

7. Discuss E-commerce and its role in

8. Explain Management Issues related to Backup and Disaster procedures.

(c) Web Rings

(b) Exchange Links

(a) News Groups & Forums

(f) Define B-C Model.

(vii) Name two Search Engines for Online Payment

(vi) Which two benefits of E-commerce.

(v) Define E-Business Search Engines.
1. Answer the following in brief:

(a) What is the role of CSR in creating Ethical

(b) How are consumers exploited by the seller?

(c) What is the impact of Religion on Ethics?

(d) What is the relationship between Ethics and Law?

(e) What are the principles of Ethics?

Note: Attempt five questions in all. Question No. 1 is compulsory.

Maximum Marks: 80

Time Allowed: 3 Hours
more relevant to today’s scenario and why?

Business”. Etude de accora de that your theory is

There are number of Ethical theories in relation to

dilemma be resolved in present scenario.

What are the reasons of Ethical dilemma? How can ethical

Define the concept of Ethics. Discuss the moral reasoning

(x) Is there any relationship between CSR and corporate

(vii) Define the importance of Social Responsibility.

(vi) Why is the major ethical issues in Human

(v) Define Sustainable development
Question (a) Explain Technical analysis.

(b) When is Market Planning?

(c) State secondary sources of information.

(d) Why project feasibility study in carried out?

1. Attempt the following questions in brief:

Compulsory Question (Allotted 30)

There are remaining seven questions.

Note: Attempt five questions in all. Question No. 1 is compulsory. Attempt any four questions out of the remaining seven questions.

Maximum Marks: 80

Time allowed: 3 Hours

Paper-MEIT-402

PROJECT PLANNING AND CONTROL

24592

MG/M-22
2. Explain the project approach of social cost benefit analysis.
3. Discuss Life of Return (LOR) method of evaluating investment proposals.
4. Discuss the financial economics of financial institutions.
5. Explain the major cost components of project description.
6. Discuss PERT and CPM as project evaluation techniques.
7. Discuss PERT and CPM as project evaluation techniques.
8. Discuss PERT and CPM as project evaluation techniques.
9. Discuss the factors involved in project analysis.
10. Explain the factors considered in project analysis.

(x) Discuss reasons of cost overrun problem in projects.
(xi) Describe Project Implementation Practices in India.
(xii) Discuss the major components of project implementation.
(xiii) Explain sensitivity analysis method for risk assessment.
(xiv) Discuss required camps as a source of finance for projects.
(xv) Illustrate the project balance sheet.
(a) State the importance of buyer-seller Dyad.

(b) What is missionary salesmanship?

(c) Distinguish between advertising and personal selling.

1. Answer the following short answer type questions:

Compassory Question (स्वयं संपादित) 20 Marks

Seven questions

Compassory: Attempt four questions out of remaining

Note: Attempt five questions in all Question No. 1

Time Allowed: 3 Hours

Maximum Marks: 80

Paper: MGT-403

SALES MANAGEMENT

24593

MIDEM-22

Total Pages: 3

Roll No.
1. Explain the process of Personal selling. Also state the various issues involved in this process.

2. Distinguish between Marketing and Sales. Also explain the function of Sales management.

3. State the purpose of evaluating the Salesforce.

4. What is a Sale Organization?

5. What are the various principles of Sales Organization? Also explain various forms of field sales organization.

6. Explain the meaning and process of selling in a Sales Territory.

7. What is the need for training Salesperson. Also discuss the problems and limitations of Sales Territory.

8. Explain the various methods that can be used for evaluating the performance of Salesforce.

9. State the need for controlling Sales expenses.

10. State the importance of motivation for Salesforce.

11. State main available sources for the requirement of Salesperson.

12. State the problems in time management by a Salesperson.
P.T.O.

Problem

1. Write short notes on the following:

(a) compulsory question (4 marks)

(b) compulsory question (4 marks)

(c) compulsory question (4 marks)

(d) compulsory question (4 marks)

(e) compulsory question (4 marks)

(f) compulsory question (4 marks)

(g) compulsory question (4 marks)

Note: Attempt the questions in all question No. 1 is Maximum Marks: 80

Time allowed: 3 Hours

Paper: MCM-4.04

INTERNATIONAL MARKETING

24594

Midna-22

Total Pages: 3

Roll No. 3
1. Discuss the controlling methods of international marketing

2. What are the parameters to understand the cultural environment?

3. Discuss the types of control methods used in the international marketing.

4. Compare local brands with global brands for their appropriateness in international markets.

5. How are channel members selected for international markets?

6. What are the challenges faced by advertisers in international marketing?

7. What is the purpose of matrix organization?

8. (i) What is transfer pricing?

9. What is the objective of sales promotion in relation to international marketing?

10. When is it suitable to go for intensive distribution?
Java Programming

Question 1:

What do you mean by data type, variable and constants in Java?

10

(i) What is mean by automatic type promotion?

(ii) Comment on the purpose of finalize() method in Java.

(iii) What is mean by dynamic method dispatching?

(iv) Describe the Section of an applet in Java.

(v) Describe the syntax of switch statement in Java.

(vi) Differentiate between String and StringBuffer class.

(vii) How user-defined packages are created?

(viii) What is an object reference variable? Explain

(ix) Comment on the purpose and syntax of showDocument() programming.

(x) Why are the major features of object-oriented programming

Note: Attempt five questions in all. Question No. 1 is compulsory

Maximum Marks: 80

Time Allowed: 3 Hours

Paper-MCT-405

Programming With Java

M08/M-22

Total Pages: 2

Roll No. 2
1. Write a program in Java to perform the following:

2. When is a pattern valid? Explain various types of patterns. Write a program to show examples of patterns in an application.

3. When is a pattern valid? Explain various types of patterns. Write a program to show examples of patterns in an application.

4. Variables. Explain the concept of various types of variables in Java.

5. Variables. Explain the concept of various types of variables in Java.

6. Variables. Explain the concept of various types of variables in Java.

7. Checking whether a pattern exists in a text or not.

8. Checking whether a pattern exists in a text or not.
1. 

2. 

3. 

4. 

5. 

6. 

(5×4=20)

7. 

8. 

(12×4=48)

9. 

10.

(20)
90-2/1350/CD/1611

لا يوجد نص يمكن قراءته بشكل طبيعي من الصورة المقدمة. يرجى تقديم نص يمكن قراءته بشكل طبيعي.
4. (3x5=15) 

(1) 

(2) 

(3) 

(4) 

(5) 

(6) 

(7) 

(8) 

9007 

Total Pages: 4
2. (2x3=6)

(3) In the given figure, the length of the line segment AB is 5 cm. If the length of the line segment AC is 3 cm, find the length of the line segment BC.

Solution:

BC = AC + AB = 3 cm + 5 cm = 8 cm

Therefore, the length of the line segment BC is 8 cm.
Page 1

[Image: A page from a document with text in a non-Latin script. The text appears to be a question or statement in a language other than English, possibly in a script like Hebrew or Arabic, given the form and structure of the characters.]

[Page 2 of the document seems to continue the same theme, with text aligned as if it were part of a larger question or exercise, possibly related to a mathematical or computational problem, given the symbols and numbers present.]
لا يمكنني قراءة النص العربي من الصورة المقدمة.
(3×7=21)

(3×3=27)

(3×2=6)

(3×3=36)

(3×2=6)

(3×3=27)

(3×2=6)

(3×3=36)
(8) \[ 2x - 3y = 5 \]

Time: Three Hours

Maximum Marks: 80

Paper VI

9301 MADAM-22

Total Pages: 6

Roll No. 1123 (5 \times 3 = 15)

(3) \[ \frac{2x + 3}{x - 2} = \frac{1}{3} \]

(4) \[ \frac{1}{x+1} + \frac{1}{x-1} = \frac{2}{x^2-1} \]

(5) \[ \frac{3x}{x^2-4} = \frac{1}{2} \]

(6) \[ \frac{3}{x^2-4} = \frac{1}{x-2} \]

(7) \[ \frac{x^2 + 1}{x^2 - 1} = \frac{1}{x^2 - x - 2} \]

(8) \[ \frac{x^2 - 1}{x^2 + 1} = \frac{1}{x^2 - 2x + 1} \]
9302/400/KD/1579

(3x1=3)

(i) Explain the concept of utility maximization and its assumptions. (3)

(ii) Discuss the role of marginal analysis in economic decision-making. (3)

(iii) Analyze the relationship between demand and supply in a market. (3)

I. Problems

The...

Maximum Marks: 80

Time: Three Hours

Paper-VI

9302

Total Pages: 3
unan

(1) 

: 

Maximum Marks : 80

Time : Three Hours

Paper-IX

MID9M-22

ROLL NO. ........................................

Total Pages : 4
2. 
(7×3=21)

(12×3=36)

(9×3=27)

(1×3=3)

(0×3=0)

(3×3=9)

(6×3=18)

(1×3=3)

(2×3=6)

(4×3=12)

(5×3=15)

(3×3=9)

(9×3=27)

(1×3=3)

(2×3=6)

(4×3=12)

(5×3=15)

(7×3=21)

(8×3=24)

(10×3=30)
(8×10)

(api) अंक संख्याओं के लिए उपयोग कीजिए।

(2) लिखित रूप से दिखाया गया रिजल्ट (२)

(1) लिखित रूप से दिखाया गया रिजल्ट (१)

(2) लिखित रूप से दिखाया गया रिजल्ट (२)

(3) लिखित रूप से दिखाया गया रिजल्ट (३)

(5×3)=15

(3×7)=21

(3×12)=36
(1) A * 4 A

(2) 3 0 3 3

(3) 8 x 8 = (8)

(4) 3 x 5 = (15)

(5) A + B = (A)

(6) A / B = (B)

(7) A % B = (A)

(8) A - B = (B)

(9) A & B = (A)

(10) A | B = (B)

(11) A << B = (A)

(12) A >> B = (B)

(13) A == B = (A)

(14) A != B = (B)

(15) A < B = (A)

(16) A > B = (B)

(17) A <= B = (A)

(18) A >= B = (B)
(5\times 3=15)

(3\times 7=21)

(3\times 12=36)
[Image 0x0 to 612x792]
2. Let \( n = 20 \) and let the numbers in the sequence be \( a_1, a_2, \ldots, a_{20} \). 

\[
\begin{align*}
\sum_{i=1}^{20} a_i &= 3033
\end{align*}
\]

Find the value of \( a_{10} \).
Fz-Eo
b) a)

2. Let x = 2, find the value of x^2 + 3x - 2.

---

P.T.O.

11430

Maximum Marks: 80

Time: Three Hours

Paper-VII

MID/M-22

Total Pages: 3

ROLL NO. ..................................
(8=1×8)

[...]

Maximum Marks: 80

Time: Three Hours

Paper-IX

11560

MIDM-22

Total Pages: 4

Roll No.:
UNIT-I

(a) Aphoristic style of Francis Bacon.
(b) Vision of French Court through Anonimo.
(c) Concept of love in "The Ree".
(d) Significance of presentation in Hamlet.
(e) Critically examine the significance of grave digger scene

2. Discuss Hamlet as a tragic failure.

3. Write brief answers in about 150 words each on the

Compulsory Question

marks.

Accompanying all questions in all four units shall attract one mark
Note: Besides Question No. 1, which is compulsory, a candidate

Maximum Marks: 80

Time : Three Hours

Group-ENL.521
Course-VI
Literature in English (1550-1660)
ENGLISH

10223

Total Pages: 2
UNIT IV

7. Compare and contrast the characters of Ferdinand and

The Duchess of Malfi.

6. Comment on the moral code of Webster as seen in the play.

UNIT III

5. Write a critical assessment of "The Cantata".

4. Discuss John Donne as a metaphysical poet.

UNIT II

9. Consider Bacon's essay as "The Birth of Sall that Would Rather

8. Attempt an appraisal of Bacon's essay "Of Studies".

Give an aptitude than offend with salley."
UNIT 1

I. Answer in about 150 words each:

Compulsory Question

Questions carry 16 marks.

Complete all the questions in the units. Attempting five questions in all. Each of the 5 units, and choose one question from each of four candidates shall choose one question from each of four.

Note: Besides question number I, which is compulsory,

Time: Three Hours

[Maximum Marks: 80]

[Paper 
Part II
Literature in English (1660-1798)]

ENGLISH

10224  
MDM 22

Roll No. 2

Total Pages: 2
UNIT-IV

"Million-II"

7. Write a critical note on Addison's "Million-I" and
   Million-II"

6. Discuss Addison and Steele as social reformers.

UNIT-III

5. Discuss Joseph Andrews as a comic epic in prose.

4. Write a comprehensive note on the plot construction in
   Fielding's Joseph Andrews.

UNIT-II

9. Discuss Samuel Johnson's poetic style.

8. Comment critically on Johnson's "London" as a satire.
UNIT I

(a) Emma in Madame Bovary

(b) Captain Blyth in Arms and the Man

(c) Angel Clare in Tess

(d) Why idea of "The Last Messiah"

I. Write short notes in about 150 words:

Compulsory Question

Carries 16 marks.

Attempt all the five questions. Each of the 5 questions shall choose one question from each of four units.

Note: Besides question no. 1, which is compulsory, a candidate can attempt any four questions from the remaining four units.

MaximumMarks: 80

Time: Three Hours

Paper VIII

LETTERATURE IN ENGLISH 1981-1991 (PART II)

10225

[Total Pages: 2]
UNIT II

9. Examine the narrative structure and technique of Madame Bovary.

OR

Madame Bovary.

8. Write an extended note on the criticism of bourgeois in

UNIT I

the Man.

7. Write an essay on G.B. Shaw's wit and humour in Arms and

OR

the Man.

6. Discuss Shaw's views on love and war shown in Arms and

UNIT III

The subtitle of "The Du anthroples" shows Tess as a

OR

"pure woman". Why?

5. The subtitle of "The Du anthroples" shows Tess as a

4. Write a comprehensive note on the plot construction in

UNIT II

3. Discuss Ezekiel's poetic style.

2. Write a note on Nissim Ezekiel's major themes in his poetry.

UNIT I

1. (d) Theme of absurdity in The Outrider

(e) Use of symbols in Death of a Salesman

(f) Irony in The Guide

(g) Central idea in Ezekiel's "The Painter"

1. Answer in about 150 words:

(Compulsory Question)

Questions carry 16 marks. Attempt five questions in all. Each of the 5
questions should carry one question from each of your
candidates. Mark number 1, which is compulsory, a
Note: besides question number 1, which is compulsory, a
Maximum Marks: 80

Time: Three Hours

Paper-ENL-24

LITEERATURE IN ENGLISH 194-2000 PART-II

MDEN-22

ROLL NO.

TOTAL PAGES: 2
UNIT I

1. Write a detailed note on the protagonist of "The Outsider."

2. Comment critically on the significance of the title in Camus' "The Outsider."

UNIT II

3. Discuss "Death of a Salesman" as a modern tragedy.

4. Discuss the theme of human relationships in "The Guide."
1. Discuss the character of Kurtz in *Heart of Darkness*.

UNIT-I

(i) Biswas

Describe a comic scene from *A House for Mr. Biswas*.

(a) Banharmala in *Kamathipura*.

(b) Singe scene in *Sons and Lovers*.

(c) Fort as a symbol in *Heart of Darkness*.

Write short notes in 150 words on the following:

1. (Compulsory Question)

Four units.

Compulsory: Attempt one question from each of the four units.

Note: Attempt five questions in all. Question No. 1 is compulsory. Attempt five questions in all. Question No. 1 is compulsory.

Time: Three Hours

Maximum Marks: 80

OPT. (i)

Paper-X/ENL-725

STUDY OF A GENRE: FICTION, PART-II

MDE/M-22

10227

Roll No. ............................................

Total Pages: 2
UNIT I

6. Discuss Kanthapura as a Gaudhia novel.

UNIT II

5. Write a detailed note on Oedipus Complex in Lawrence's Sons and Lovers.

UNIT III

4. Discuss Paul Clara relationship in Sons and Lovers.

UNIT IV

3. Hypothetical operations of improvement. Discuss Heart of Darkness offers a powerful condemnation of the
UNIT II

3. Bring out a detailed summary of "Mending Wall."

2. Discuss Robert Frost as a Regional poet.

UNIT I

1. Write short notes in 150 words on the following:
   (d) Millicent Douglas in The Happy Age.
   (e) Music symbols in A Shower Named Desire.
   (f) Robert Cohn in The Sun Also Risers.
   (g) Opening stanza of "Birches."

Compulsory Questions

Questions carry equal marks. Attempt one question from each of the four units. All questions in all questions in all Question no. 1 is compulsory.

Maximum Marks: 80
Time: Three Hours

Course: XVT
AMERICAN LITERATURES (PART II)

11474
MDQM-22

Roll No. ........................................ Total Pages: 2
UNIT I

Discuss the use of new dramatic techniques in The Happy Ape.

UNIT II

Discuss the central theme in The Happy Ape.

UNIT III

Discuss The Sun Also Rises as a novel about the Lost Generation.

UNIT IV

Discuss Blanche-Diamond's relationship in A Streetcar Named Desire.

Bring out the significance of the life of a Streetcar Named Desire.
UNIT I

Define Author according to Dentia

d) Amold's views on heroes.

e) Define hero in modern fiction.

Qualifies of a poet according to Wordsworth:

Following:

1. Attempt Short notes in about 100-150 words on the

Compulsory Question

Questions carry equal marks.

Each Unit Question Number 1 is Compulsory. All
Note: Attempt three questions in all, selecting one question from

Maximum Marks: 80

Course: XW

CRITICAL THEORY (Part II)

11473

Mคำถาม : 2

Total Pages : 2

ROLL NO.
deconstruction criticism?

9. What according to Abrams are the main drawbacks of

8. Write a critical assessment of Saussure's views expressed in

UNIT-IV

7. Elaborate Eltis's theory of impersonality

6. Virginia Woolf is quite critical of certain novelists while

UNIT-III

5. What is the critical position taken by Arnold in his essay

4. What is Arnold's judgment about John Keats as a poet?

UNIT-II
UNIT II

3. Bring out a detailed summary of "Mending Wall".

UNIT I

2. Discuss Robert Frost as a Regional Poet.

(d) Millicent Douglas in The Happy Age.
(c) Music symbolism in a Streetcar Named Desire.
(b) Robert Cohn in The Sun Also Rises.
(a) Opening stanza of "Dulce et Decorum Est".

1. Write short notes in 150 words on the following:

Compulsory Questions

Questions carry equal marks. Attempt one question from each of the four units. All questions carry equal marks.

Note: Attempt five questions in all. Question no. 1 is compulsory.

Time: Three Hours

Course-XVII

AMERICAN LITERATURES (Part II)

1474

MDM-22

Roll No. ............................................................... Total Pages: 2
UNIT-IV

7. Discuss the use of new dramatic techniques in The Happy Ape.

8. Bring out the significance of the title A Streetcar Named Desire.

9. Discuss Blanche- Stanley relationship in A Streetcar Named Desire.

UNIT-III

5. Discuss The Sun Also Rises as a novel about the Lost Generation.

6. Discuss the central theme in The Happy Ape.
3. Train to Pakistan is a critique of the impact and usefulness of

OR

2. Discuss communal frenzy in Singh's Train to Pakistan.

UNIT-I

(a) Ending of the Hindu View of Life.
(b) Patriarchy in Silence; the Court is in Session.
(c) Dharmic Voices in the City.
(d) Symbols in Train to Pakistan.

Write short notes of about 150 words on the following:

Comprehensive Question

Equal marks:

Units. Attempting five questions in all. All questions carry
comparable weight. Choose one question from each of your
answers.

Note: Besides question number 1, which is comprehensive, a

PAPER-XVIII

INDIAN WRITING IN ENGLISH (PART-II)

MDQ/M-22

11475

ROLL NO. 2

TOTAL PAGES: 2
9. What kind of message does Radhakrishnan give in The Hindu View of Life?

OR

8. Discuss Radhakrishnan's prose style in The Hindu View of Life.

UNIT-IV

7. Write a note on women's suffering in Teundukars' Silence.

OR

6. Discuss the social concerns in Silence. The court is in Session.

UNIT-III

5. Discuss the postmodern elements in Voice in the City.

OR

4. Comment on the unspoken voice of expression and vision in Deserts Voice in the City.
UNIT I

1. Write an illustrative note on Noun clause.

2. Write an illustrative note on Noun clause.

UNIT-II

Communicative method:

(d) Role of English in India.
(e) Simile and metaphor.
(f) Adverb clause and its functions.

UNIT-IV

According to the principles of TLT or Direct Method, design a pedagogic exercise teaching Grammar and intonations. Write a critical note on the salient features of Grammar.

7. What is ELT in India so that inspite of its huge expansion.
UNIT-III

enchantment.

only way of escaping from this unwatched catennis

and perhaps ill we are bound to each other so that only

will carry us to Turkey and we can blend there and can get

been in time to make register round us and lying in vein. It

us out, away from all those unnatural bonds that we have

been done by others, see how the luck is utilizing

...... we never thought of being alone together again.

5. Write a critical appreciation of the following passage:

And ploughs down paths and ploughs and fences and rivers.

That moves the treasure to the naked earth.

The timeless duty performed by the self.

Over the toppled cores the falling flowers

I see in the progress of this sadness.

lies fellow now. But as the sun declines

and tribal spears the tried charges of corn.

Red clods in which the weary once was lain

Long by the melting shore of insul I am

His heart more deeply than he wounds the plain.

and though green his crimson flourishes.

The plough man drives a slow somnambulist.

The parts in shade round the garden-houses.

His naked skin clothes in the toiled mist.
Write short notes on any four of the following in 150 words each:

1. (Compulsory Question)

Four units. All questions carry equal marks. Compulsory: Attempt one question from each of the five units. Attempt five questions in all. Question No. 1 is compulsory. Time: Three Hours [Maximum Marks: 80]

Paper: XX

LITERATURE & GENDER (PART-II)

1478
UNIT I

Long Silence.
Discuss the character of Jaya in Shashi Deshpande's "That in That Long Silence."
Bring out the predicament of Indian women as presented...

UNIT II

experience and culture of Afro-American Women. Elaborate.
The Color Purple is concerned with defining the existence of the significance of the title "The Color Purple.

UNIT III

Morrison's novel "Beloved."
How issues of race and gender form the central core of "Beloved.
Discuss the characters of Sethe and Paul D as figures in...

UNIT II

against the imagined one. Discuss.
Simon de Beauvoir in her work plus the Real Woman to The Second Sex.
Discuss Simone de Beauvoir as a feminist with reference...

UNIT I