

CENTRAL INSTITUTE OF PETROCHEMICALS ENGINEERING & TECHNOLOGY
HEAD OFFICE : GUINDY, CHENNAI – 600 032.
ACADEMIC CELL
SECOND SEMESTER EXAMINATION – JULY 2024

Duration : 3 Hours
Course : DPT
Subject : Communication English – II

Max. Marks: 60
Date : 01.07.2024
Time : 02.00 p.m. to 05.00 p.m.

(DO NOT CHANGE SEQUENCE OF QUESTION NUMBER IN ANSWER SCRIPT)

PART – A

Answer **all** questions

12 x 1 = 12

1. Identify the pair of homophones
a) Bark , Bark b) Hard , Rigid c) Knight , Night d) Bright , Dull
 2. “Although it was raining, I went for a walk “ is –
a) Simple sentence b) Compound sentence c) Complex sentence d) None of these
 3. “ Breakfast “ is an example of –
a) Closed compound words b) Open compound words c) Phrase d) Clause
 4. sky has no limits.
 5. Shakespeare is Kalidasa of England.
 6. She heard an old tale about Unicorn.
 7. Amateur means done in an incompetent way. (true/false)
 8. Tranquil means free from disturbance. (true/false)
 9. The sun looks amazing today is an example of compound sentence. (true/false)
- Write the full form of the following abbreviations:**
10. MHRD –
 11. MEMO –
 12. UNESCO –

PART – B

Answer **all** questions (Max. 40 words)

4 x 2 = 8

1. Write the meaning of the following idioms –
a) To burn the midnight oil b) Forty Winks
2. Convert the active voice into passive voice –
a) I did not trust anybody. b) Must we cut this tree?
3. Match words in Column A with their meaning in Column B:

Column A	Column B
i) Alma Mater	A place where objects are exhibited.
ii) Planetarium	Absence of Government.
iii) Museum	An optical device for projecting celestial objects.
iv) Anarchy	The school or college one attends.
4. Write any two Hyphenated compound words.

PART – C

Answer any **six** questions (Max. 100 words)

6 x 4 = 24

1. Write the use of Quotation mark and colon with one example for each.
2. Transform simple sentences into compound sentences –
i) Being Sick, I went to the doctor.
ii) In spite of the rain, the children went out to play.
iii) Having handed over the flowers to my mom, I hugged her.
iv) Despite the train being late, Preetha waited for the train.
3. Complete the following question tags :
i) Juhi is from Mumbai, ?
ii) Sam isn't a good boy, ?
iii) It is very hot today, ?
iv) She never acts so rudely, ?

- 4. Complete the following dialogues:
 - i) Teacher : Good morning students.
Student : Ma'am.
 - ii) Teacher : Why are you absent for long days.
Student : I am
 - iii) Teacher : Okay, did you finish your homework ?
Student : Sorry,
 - iv) Teacher : When will you do your homework ?
Student : Ma'am
- 5. Define complex sentences. Write three examples.
- 6. Define Phrases and Clauses. Write two examples of each.
- 7. Write a report on cyber security threats in the Moder Digital Age.

PART – D

Answer any **two** questions (Max. 300 words)

2 x 8 = 16

- 1. Write a letter to your friend, who just met with an accident wishing about his speedy recovery.
- 2. Write an Essay on 'The impact of Social Media on Mental Health'.
- 3. Drop an Email to your employees about the change in work timings.

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HEAD OFFICE : GUINDY, CHENNAI – 600 032.
ACADEMIC CELL
SECOND SEMESTER EXAMINATION – JULY 2024

Duration : 3 Hours
 Course : DPT
 Subject : Engineering Mathematics

Max. Marks: 60
 Date : 02.07.2024
 Time : 02.00 p.m. to 05.00 p.m.

(DO NOT CHANGE SEQUENCE OF QUESTION NUMBER IN ANSWER SCRIPT)

PART – A

Answer **all** questions

12 x 1 = 12

1. The matrix having only one column is called:
 a) zero matrix b) diagonal matrix c) row matrix d) column matrix
2. $\int \sin x \, dx =$
 a) $\cos x$ b) $-\cos x$ c) $-\operatorname{cosec} x$ d) $\cot x$
3. The conjugate of $x-iy$ is
 a) $x+iy$ b) $x-iy$ c) $-x+iy$ d) $-x-iy$
4. $\frac{d}{dx} \sec x =$ _____
5. $i^{100} =$ _____
6. Order and degree of the following differential equation $\left(\frac{dy}{dx}\right)^2 + x \frac{dy}{dx} + y = 0$ is _____
7. If modulus of a vector is zero then it is called unit vector (True/False)
8. Differentiation of constant function is zero. (True/False)
9. In Binomial probability distribution $p+q = 1$. (True/False)

Write full form of the following:

10. $\operatorname{CiS}\Theta$
11. D.P.D.
12. P.V.

PART – B

Answer **all** questions (Max. 40 words)

4 x 2 = 8

1. If $A = \begin{bmatrix} 4 & 3 \\ 2 & 5 \end{bmatrix}$, then, evaluate $A^2 - 9A + 14I$
2. Simplify $\left(\frac{\cos \theta + i \sin \theta}{\sin \theta + \cos \theta}\right)^4$
3. If $y = \log(\sin x)$ then find the derivative of y with respect to x .
4. Form the differential equation of $y = m x + c$, m and c being arbitrary constants.

PART – C

Answer any **six** questions (Max. 100 words)

6 x 4 = 24

1. If $Z_1 = 1 + 2i$ and $Z_2 = 3 + 4i$, evaluate $(Z_1 + Z_2)$ and $(Z_1 - Z_2)$
2. If $x^3 + y^3 = 3axy$ then evaluate dy/dx .
3. Explain scalar and vector product of two vectors.
4. Evaluate $\int x^2 e^x \, dx$.
5. The mean and variance of the Binomial distribution 16 and 8. Find n of the distribution.
6. Find the Adjoint of the following matrix: $A = \begin{bmatrix} 3 & 7 \\ 1 & 4 \end{bmatrix}$
7. Evaluate $\int_0^1 (3x^2 + 2x + 1) \, dx$

PART – D

Answer any **two** questions (Max. 300 words)

2 x 8 = 16

1. Solve the following system of equations by Cramer's rule:
 $2x - y + 3z = 9$, $x + y + z = 6$, $x - y + z = 2$.
2. Find the area bounded by the curve $y = x^2$, the x -axis, and the ordinates $x = 0$ and $x = 3$.
3. Define the following with example
 a) Lower and Upper triangular matrix. b) Conjugate of complex number.
 c) Integration by Parts. d) Binomial distribution.

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HEAD OFFICE : GUINDY, CHENNAI – 600 032.
ACADEMIC CELL
SECOND SEMESTER EXAMINATION – JULY 2024

Duration : 3 Hours
Course : DPT
Subject : Engineering Physics

Max. Marks: 60
Date : 03.07.2024
Time : 02.00 p.m. to 05.00 p.m.

(DO NOT CHANGE SEQUENCE OF QUESTION NUMBER IN ANSWER SCRIPT)

PART – A

Answer **all** questions

12 x 1 = 12

- Dimensional formula for force is
a) $M^1L^1T^{-2}$ b) $M^1L^{-1}T^{-2}$ c) $M^0L^1T^{-2}$ d) $M^2L^2T^1$
- Supplementary unit of solid angle is
a) angle b) degree c) steradian d) none of these
- Critical angle is the angle of incidence for which angle of refraction becomes
a) 0 degree b) ninety degree c) forty five degree d) none of these
- The Lateral strain means -----
- Transfer of heat from a fluid to a solid surface or within a fluid is called -----
- A _____ lens is thick at centre and thin at ends.
- Strain is dimensionless quantity -Say True or False
- .-273°C is known as absolute zero temperature - Say True or False
- Streamline Flow is also known as laminar flow - Say True or False.
- What is full form of **S.I**
- What is full form of **LASER**
- P.E** stands for

PART – B

Answer **all** questions (Max. 40 words)

4 x 2 = 8

- Write the S.I & C.G.S units of the following physical quantities-
(a) Force (b) Work.
- Define the potential energy and kinetic energy
- What is critical angle?
- Define modulus of Elasticity.

PART – C

Answer any **six** questions (Max. 100 words)

6 x 4 = 24

- Explain the classification of physical quantities with examples
- Define momentum and give its derived and dimensional formula
- Define Poisson's ratio. Write its mathematical formula.
- Define viscosity, S.I unit with example.
- Define streamline flow and turbulent flow
- What is recoil velocity of a gun? How can you derive the expression for recoil velocity of gun?
- Explain convex and concave lens.

PART – D

Answer any **two** questions (Max. 300 words)

2 x 8 = 16

- Convert a physical quantity force of 1 Newton to dyne
- State Hooke's law. Explain the three modulus of elasticity.
- State and explain the Law of conservation of energy of a freely falling body.

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HEAD OFFICE : GUINDY, CHENNAI – 600 032.
ACADEMIC CELL
SECOND SEMESTER EXAMINATION – JULY 2024

Duration : 3 Hours
Course : DPT
Subject : Electrical & Electronics Engineering

Max. Marks: 60
Date : 04.07.2024
Time : 02.00 p.m. to 05.00 p.m.

(DO NOT CHANGE SEQUENCE OF QUESTION NUMBER IN ANSWER SCRIPT)

PART – A

Answer **all** questions

12 x 1 = 12

- Unit of resistance is _____
a) Ohms b) Amperes c) Volt d) Joules
- Kirchhoff's second law is based on law of conservation of _____
a) Charge b) Energy c) Momentum d) Mass
- The function of commutator in a DC generator is to convert _____
a) AC to DC b) AC to AC c) DC to DC d) DC to AC
- The DC motor develops a _____
- _____ Elements serve as protection against overload.
- In a circuit ammeter is used to measure _____
- MCB is used in circuits for Overload protection. Say (True / False)
- Resistance limits the current. Say (True / False)
- The output of an exclusive-OR (XOR) gate is 1 only when the inputs are different. Say (True / False)
- Full form of Hz
- Full form of CT
- Full form of LED

PART – B

Answer **all** questions (Max. 40 words)

4 x 2 = 8

- Define Kirchhoff's voltage law
- What is Auto-transformer?
- What is electric shock?
- Define torque

PART – C

Answer any **six** questions (Max. 100 words)

6 x 4 = 24

- What is the role of commutator?
- Describe the construction of a three-phase motor?
- Define Time period & Power factor?
- What are the types of three phase induction motor?
- Give some applications of DC motors?
- What is back EMF in DC motor?
- Define MMF & Magnetic field intensity?

PART – D

Answer any **two** questions (Max. 300 words)

2 x 8 = 16

- Explain construction and working of Transformer with neat sketch.
- Explain importance of earthing.
- Draw the logic gates and its truth table.

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HEAD OFFICE : GUINDY, CHENNAI – 600 032.
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SECOND SEMESTER EXAMINATION – JULY 2024

Duration : 3 Hours
Course : DPT
Subject : Development of Life Skills

Max. Marks: 60
Date : 05.07.2024
Time : 02.00 p.m. to 05.00 p.m.

(DO NOT CHANGE SEQUENCE OF QUESTION NUMBER IN ANSWER SCRIPT)

PART – A

Answer **all** questions

12 x 1 = 12

1. During practice, by how much should the speech be lengthened?
a) 2 to 5 % b) 6 to 10 % c) 7 to 11 % d) 9 to 13 %
2. Life skills address a balance of three areas: knowledge, _____ and skills.
a) aptitude b) confidence c) attitude d) abilities
3. Our dress code is an example of _ communication.
a) Verbal b) nonverbal c) written d) spoken
4. The tone of the speaker should be _____
5. The goal of the approach is to promote healthy and social behavior.
6. In a group discussion, one must communicate with ____
7. FSM Stands for _____
8. Write the extended form of LEDO
9. Write full form of RJST
10. All job interviews have the same objective. (True/False)
11. A moderator is a monitor of a group discussion. Say True or False
12. Kantian ethics is also known as duty ethics. Say True or False

PART – B

Answer **all** questions (Max. 40 words)

4 x 2 = 8

1. What is the difference between Hard skills and Soft skills?
2. Define Motivation?
3. List the different styles of Leadership
4. How Body Language Plays an Important Role in Communication?

PART – C

Answer any **six** questions (Max. 100 words)

6 x 4 = 24

1. How does Body language help in communication?
2. Why it is important for team members to support each other?
3. Write down the benefits of time management
4. Explain about trust, respect of human values?
5. Difference between morals and ethics
6. Explain why health is important.
7. Explain about stress & conflict management?

PART – D

Answer any **two** questions (Max. 300 words)

2 x 8 = 16

1. Write short notes on Interview Techniques and Group Discussion
2. Why is decision making an important Leadership skill?
3. Briefly explain the basic principle theory of Motivation.
