



18-1121

CENTRAL INSTITUTE OF PETROCHEMICALS ENGINEERING & TECHNOLOGY
HEAD OFFICE : GUINDY, CHENNAI – 600 032.
ACADEMIC CELL
SECOND SEMESTER EXAMINATION – JULY 2023

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

Max. Marks: 60
Date : 03.07.2023
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

30 x 1 = 30

Choose correct options.

- Choose the correct form to complete the sentence: "We _____ be more careful next time."
a) should b) shouldn't c) could d) can't
- Which preposition should be used in the sentence: "He is interested _____ learning foreign languages."
a) at b) in c) on d) by
- "The meeting will start _____ 9 o'clock."
a) at b) in c) on d) by
- Which preposition should be used in the sentence: "He will arrive _____ ten o'clock."
a) at b) in c) on d) by
- Which conjunction should be used to join these two sentences: "He studied hard for the exam. He didn't pass."
a) and b) but c) or d) so
- What does the idiom "break the ice" mean?
a) To cause something to freeze. b) To break a physical object.
c) To start a conversation or to overcome initial shyness. d) To create a dangerous situation.
- What does the idiom "the ball is in your court" mean?
a) A game of tennis is about to start. b) It's time to play a ball game.
c) It's your turn to take action or make a decision. d) The ball has been lost.
- What does the idiom "in a nutshell" mean?
a) Being very small in size. b) Expressing something in a concise or summarized manner.
c) Being confused or disoriented. d) Eating a lot of nuts.
- Which article should be used to complete the sentence: "I saw _____ cat in the backyard."
a) a b) an c) the d) no article needed
- Which article should be used to complete the sentence: "He is _____ honest person."
a) a b) an c) the d) no article needed
- Which article should be used to complete the sentence: "I want to go to _____ beach in front of the mountain."
a) a b) an c) the d) no article needed
- Which type of sentence is this? "He is a good boy and he is also a good gamer."
a) simple b) compound c) complex d) none of these
- Which type of sentence is this? "She is the girl who won the medal."
a) simple b) compound c) complex d) none of these
- Which type of sentence is this? "He loves to play cricket in the evening."
a) simple b) compound c) complex d) none of these
- Which article should be used to complete the sentence: "She bought _____ new car."
a) a b) an c) the d) no article needed

Fill in the blanks.

- I _____ (see) that movie three times already.
- She _____ (cook) dinner when the guests arrived.
- The children _____ (build) a sandcastle at the beach.
- They _____ (travel) to Spain next summer.
- We _____ (study) Spanish for two years now.
- The word "an" is used before words that start with a vowel sound. True/False
- Prepositions are used to show the relationship between a noun and another word in the sentence. True/False
- The word "a" is used before words that start with a vowel sound. True/False
- Prepositions are used to connect words in a sentence. True/False
- Adjectives describe verbs. True/False



Write full form of the following abbreviations-

- 26. ATM
- 27. ASAP
- 28. VIP
- 29. CEO
- 30. FAQ

PART – B

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

4 x 2 = 8

1. Match words in column A with their meanings in column B

Column A

Column B

- a. Eloquent - Showing careful and persistent effort or work.
- b. Resilient - Friendly and pleasant in manner.
- c. Amiable - Able to recover quickly from difficult situations or setbacks.
- d. Diligent - Fluent or persuasive in speaking or writing.

2. Make the passive voice of the following sentences:

They are painting the walls.

We have completed the project.

3. Use the following idioms in your own sentence.

Cry over spilled milk

Out of the blue

4. Form any two words with the help of suffixes and two with the help of prefixes.

PART – C

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

4 x 3 = 12

1. Define homophones. Give two pairs of homophones as examples by using them in your own sentence.

2. Complete the following tag questions:

a. She can swim,?

b. He is a doctor,?

c. They went to the store,?

3. What do you mean by a complex sentence? Explain with any two examples.

4. Correct the following sentences:

a. Hindustan Times is a good newspaper.

b. He is a honest man.

c. He has come last year.

5. Complete the following dialogues:

Customer: Good afternoon! I'm looking for a new laptop. Can you help me?

Salesperson: What kind of?

Customer: I'll mainly use it for work and occasional gaming.

Salesperson: I see. We haveyour needs.

Customer: with Windows.

Salesperson: We have the latest models from various brands.

PART – D

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

2 x 5 = 10

- 1. Imagine you attended a science fair organized by your college. Write a report on the event, highlighting the projects displayed, the activities that took place, and your overall experience.
- 2. Write a letter to your friend asking him to join you on a picnic telling him about your plans.
- 3. Write an email to your bank manager asking him to inform you about the rules of opening a bank account

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HEAD OFFICE : GUINDY, CHENNAI – 600 032.
ACADEMIC CELL
SECOND SEMESTER EXAMINATION – JULY 2023

Duration : 3 Hours
 Course : DPT
 Subject : Engineering Mathematics

Max. Marks: 60
 Date : 04.07.2023
 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

30 x 1 = 30

1. If $|A|=0$ then A is
 a) zero matrix b) singular matrix c) non-singular d) zero
2. If two rows of a determinant are identical, the value of a determinant is
 a) 0 b) 1 c) 2 d) 3
3. If matrix $A=A^t$ then matrix A is
 a) skew symmetric b) symmetric c) identity d) null
4. $e^{i\theta} =$
 a) $\cos\theta + i\sin\theta$ b) $\cos\theta - i\sin\theta$ c) $\cos\theta$ d) $\sin\theta$
5. The modulus of $x+iy$ is
 a) $\sqrt{x^2 + y^2}$ b) $x^2 + y^2$ c) $x^2 - y^2$ d) $\sqrt{x^2 - y^2}$
6. $i^{500} =$
 a) i b) -i c) 1 d) -1
7. Find a if $A = \begin{bmatrix} 2 & a \\ 1 & 5 \end{bmatrix}$ is singular matrix
 a) 10 b) 8 c) $\sqrt{10}$ d) $\sqrt{8}$
8. $\cot 120^\circ =$
 a) $\frac{1}{\sqrt{3}}$ b) $-\frac{1}{\sqrt{3}}$ c) $\frac{1}{3}$ d) $\frac{1}{2}$
9. $\int \operatorname{cosec}x \cot x dx =$
 a) $\sec x$ b) $\operatorname{cosec}x$ c) $-\operatorname{cosec}x$ d) $\cot x$
10. $\frac{d^5}{dx^5} =$
 a) 4 b) 6 c) 25 d) 0
11. In binomial distribution, formula of calculating standard deviation is
 a) square root of p b) square root of pq c) square root of np d) square root of npq
12. Find $P(B^c/A)$, if $P(A)=0.4, P(B)=0.5$ and $P(B^c \cap A) = 0.15$
 a) $\frac{1}{6}$ b) $\frac{3}{8}$ c) 2 d) 6
13. Transpose of column matrix is
 a) zero matrix b) diagonal matrix c) row matrix d) column matrix
14. $(\cos\theta + i\sin\theta)^n =$
 a) $\cos\theta + i\sin\theta$ b) $\cos n\theta + i \sin n\theta$ c) $\cos\theta$ d) $i\sin\theta$
15. Order of differential equation, $\frac{dy}{dx} + \sin x \cdot y = 0$
 a) 2 b) 3 c) 1 d) 0

Write full form of the following

16. PMF
17. S.D.
18. $\operatorname{Cis}\theta$

Fill in the blanks

19. -----of an event of a random experiment is a numerical measure of chance of the occurrence of that event.
20. $\frac{d \log x}{dx} =$ -----
21. $z = x^2 + xy, \frac{\partial z}{\partial x} =$
22. $\int x^{10} dx =$
23. $\int \cos x dx =$
24. In probability $p+q=1$. True /false
25. If $|A|=0$ then A is singular matrix. True/false

- 26. $\int e^x dx = x \cdot e^x$. True/false
- 27. $z = x^3 + y^3, \frac{\partial z}{\partial x} = 3x^2$. True/false
- 28. Product of cube roots of unity is 1. True/false
- 29. The mean of binomial distribution is. -----
- 30. Write product theorem of probability.

PART – B

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

4 x 2 = 8

- 1. What is Argand diagram?
- 2. $\int \sin x \cos x dx =$
- 3. Find the value of \sqrt{i} .
- 4. Determine modulus of $1+i$.

PART – C

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

4 x 3 = 12

- 1. Find square root of $3+4i$.
- 2. Examine whether $f(x) = \frac{2x}{9}, 0 \leq x \leq 3$ can be probability density function of a continuous random variable x .
- 3. Solve $x^3 - 1 = 0$, using Demoiivre's theorem.
- 4. Solve $\int \log x dx$.
- 5. Find n if mean of binomial probability distribution is 857.6 and probability is 64%.

PART – D

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

2 x 5 = 10

- 1. If $y = \sin(a \sin^{-1} x)$, prove that $(1-x^2) \frac{d^2y}{dx^2} - x \frac{dy}{dx} + a^2 y = 0$
- 2. Prove that $(1 + \cos\theta + i \sin\theta)^n + (1 + \cos\theta - i \sin\theta)^n = 2^{n+1} \cos^n \frac{\theta}{2} \cdot \cos \frac{n\theta}{2}$
- 3. Using Cramer's rule, solve the equations, $x+y+z=1, 2x+2y+3z=6$ and $x+4y+9z=3$.

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HEAD OFFICE : GUINDY, CHENNAI – 600 032.
ACADEMIC CELL
SECOND SEMESTER EXAMINATION – JULY 2023

Duration : 3 Hours
 Course : DPT
 Subject : Engineering Physics

Max. Marks: 60
 Date : 05.07.2023
 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

30 x 1 = 30

1. The dimensional formula for force is
 (a) $[MLT^{-2}]$ (b) $[ML^{-1}T^{-1}]$ (c) $[M^{-1}LT^{-1}]$ (d) $[MLT]$
2. The SI unit of mass is
 (a) Milligram (b) Pound (c) Gram (d) Kilogram
3. Weight is a quantity
 (a) Vector (b) Heat (c) Kelvin (d) Scalar
4. If the moment of force rotates the body in clockwise direction, it is called
 (a) Anti-clockwise moment (b) Work (c) Clockwise moment (d) Moment
5. A shot fired from a gun is an example of
 (a) Inelastic collision (b) Projectile motion (c) Rotational motion (d) Elastic collision
6. The number of revolutions made by the particle in one second in circular motion
 (a) Period (b) Frequency (c) Acceleration (d) Velocity
7. The inability of a body to change its state on its own without the help of external force is known as
 (a) Force (b) Work done (c) Momentum (d) Inertia
8. Ratio of change in volume to original volume is known as
 (a) Bulk strain (b) Linear strain (c) Shearing strain (d) Rigidity strain
9. Liquid particles flow in zigzag and random manner in
 (a) Normal flow (b) Streamline flow (c) Turbulent flow (d) Accelerated flow
10. When the angle of contact is high, it is known as
 (a) Hydrophilic surface (b) Hydrophobic surface (c) Flat surface (d) Curved surface
11. Freezing point of water is
 (a) 373 K (b) 253 K (c) 352 K (d) 273 K
12. While cooking, vessels transfer heat by
 (a) Conduction (b) Convection (c) Radiation (d) Irradiation
13. LASER radiation is
 (a) Multidirectional (b) Bidirectional (c) Tridirectional (d) Highly directional
14. Photon emission takes place by inducement
 (a) Catalytic emission (b) Spontaneous emission (c) Stimulated emission (d) Coherent emission
15. When pumping is done by accelerating electrons to high velocity by application of electric field, it is known as
 (a) Electrical Pumping (b) Electronic pumping (c) Optical pumping (d) Static pumping

Fill in the blanks

16. Two equal and opposite forces acting at different points in a body constitute a
17. Force acting on a body in curvilinear motion that is directed toward the centre of curvature or axis of rotation
18. Light plays dual role. It behaves like in some places and as in some other places.
19. law of thermodynamics states that heat cannot be transferred from a colder body to a hotter body.
20. A mirror is one in which the reflective surface bulges towards the light source.

Say True or False

21. A body is said to be in motion if it does not change its place or position with respect to its surroundings.
22. Ratio of increase in thickness to original thickness in lateral direction is known as lateral contraction.
23. If Reynolds number is more than 2800, it is known as turbulent flow.
24. Coconut oil has higher viscosity compared to castor oil.
25. Silver is a good conductor of heat.

Write the full form of the following:

26. °C
27. LASER
28. I
29. KE
30. f

PART – B

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

4 x 2 = 8

1. What is a projectile?
2. What is radius of gyration?
3. Define refraction?
4. What is stimulated emission?

PART – C

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

4 x 3 = 12

1. State Lami's theorem.
2. Define strain. What are its types?
3. Derive the expression for horizontal range of projectile.
4. What are the 2 laws of refraction?
5. What are the characteristics of LASER?

PART – D

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

2 x 5 = 10

1. Write short notes on (a) Young's modulus (b) Rigidity modulus
2. Explain (i) Fibre optics, (ii) Total Internal Reflection.
3. Explain the construction and working of LASER.



18-1124

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HEAD OFFICE : GUINDY, CHENNAI – 600 032.
ACADEMIC CELL
SECOND SEMESTER EXAMINATION – JULY 2023

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

Max. Marks: 60
Date : 06.07.2023
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

30 x 1 = 30

1. According to ohm's law, $V =$ _____
a) IR b) I² R c) I/R d) IR²
2. Resistances in parallel _____
a) $1/R_1 + 1/R_2$ b) $R_1 + R_2$ c) $R_1 \times R_2$ d) None of these
3. The frequency of DC supply is _____
a) Zero Hz b) 16 Hz c) 50 Hz d) 100 Hz.
4. Inverter circuit converts _____
a) AC to DC b) DC to AC c) DC to DC d) AC to AC
5. Alternator is an _____
a) DC Generator b) DC Motor c) AC Generator d) AC Motor
6. In a circuit ammeter is used to measure _____
a) Current b) EMF c) Voltage d) Power
7. DC Generator working on the principle of _____
a) Kirchhoff law b) Faraday's law c) Fleming's law d) Newton's law
8. Transformer Losses are _____ losses
a) power b) voltage c) iron & copper d) none of these
9. The unit of energy is _____.
a) KW b) kWh c) HP d) KVA
10. NOT of AND gate is called _____
a) NAND gate b) OR Gate c) NOR gate d) XOR gate
11. DC Generator is used for _____
a) small power supply b) charging battery c) general lighting d) all of these
12. Steel stamping is used in Transformer for reducing the _____
a) power b) voltage c) current d) losses
13. _____ Elements serve as protection against overload.
a) Switch b) Fuse c) Resistor d) Relay
14. Earth wire or ground wire is made of _____
a) Copper b) Aluminum c) Iron d) Galvanized steel
15. What is meant by flow of electrons?
a) insulator b) electric current c) semiconductor d) voltage
16. Static Capacitors are used for _____
17. The load of a consumer is generally measured in terms of _____
18. Average power taken by the pure capacitor is _____
19. A(n) _____ transformer is usually used for audio or power applications.
20. Capacitor does not allow sudden change of _____
21. The resistance of conductor will increase as temperature increases. Say (True/ False)
22. The watt is the unit of power. Say (True/ False)
23. MCB is used in circuits for Overload protection. Say (True / False)
24. Step-up transformer decreases the voltage. Say (True / False)
25. A Motor is used to convert Electrical energy into mechanical energy. Say (True or False)
26. SCR means _____
27. BJT Means _____
28. Expand VT _____
29. Expand RMS _____
30. Expand KVA _____

PART – B

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

4 x 2 = 8

1. State Kirchhoff's Current Law (KCL)
2. What is an ideal transformer?
3. Define Voltage
4. What are the types of rectifier?

PART – C

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

4 x 3 = 12

1. What is meant by Lightning arrestors?
2. What are the common methods of Earthing?
3. Write the truth table for EXNOR gate
4. Mention the two types of winding used in the DC machines?
5. Give some applications of DC motors?

PART – D

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

2 x 5 = 10

1. What are the losses in Transformers, Explain?
2. Explain the importance of Earthing.
3. Explain the Half wave rectifier with neat diagram.

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HEAD OFFICE : GUINDY, CHENNAI – 600 032.
ACADEMIC CELL
SECOND SEMESTER EXAMINATION – JULY 2023

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

Max. Marks: 60
Date : 07.07.2023
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

30 x 1 = 30

1. Collective qualities or characteristics that distinguish a person.
a) Attitude b) Personality c) Character d) Self image
2. Which of these are vital for any organization?
a) Debates b) Group discussions c) Speeches d) Arguments
3. _____ is a term used to describe a set of basic skills acquired through learning.
a) Life skills b) Vocational skills c) Literacy skills d) none of the above
4. _____ is defined as psychosocial abilities for adaptive and positive behavior
a) Recreational skills b) Soft skills c) Life skills d) Vocational skills
5. _____ is the way one perceives himself positively / negatively.
a) Self-image b) Self control c) Self-esteem d) Self talk
6. Which of these qualities are important in a group discussion?
a) Emotional stability b) Hostility c) Ignorance d) Aggressiveness
7. The symptoms of stress can be divided in to the following categories
a) Cognitive b) Emotional c) Physical d) All of the above
8. The word for how we hold our body is:
a) proxemics b) posture c) kinesics d) congruence
9. A _____ speaker looks into the eyes of the audience.
a) confident b) impatient c) rude d) impolite
10. A speech must be prepared with _____ in mind.
a) the result b) praise c) an audience d) admiration
11. Which of these is important in having mutual understanding with colleagues?
a) Effective listening b) Speaking c) Talking d) Writing
12. Which of these do not enhance listening skills?
a) Attention b) Frankness c) Clear perception d) Ignoring
13. Which of these interviews uses screening tools?
a) Stress interview b) Screening interview c) Group interview d) Behavioral interview
14. How many styles are used in a screening interview?
a) Two b) Five c) Three d) Four
15. In which of these, more than one candidate is interviewed?
a) The behavioral interview b) The stress interview c) The group interview d) The audition
16. Communication is a part of _____ skills.
17. Our dress code is an example of _____ communication.
18. _____ Relationship are between two or more people.
19. Job satisfaction have _____ related to Absenteeism and Turnover.
20. Every individual is _____ by their personality.
21. All laws are framed to meet the highest ethical standards. Say true or false
22. In a group discussion, the discussion must be directed to its logical conclusion. Say true or false
23. Under ethical fundamentalism, a person looks to an outside source for ethical rules or commands. say true or false.
24. Kantian ethics is also known as duty ethics say true or false.
25. Continuous reinforcement applies a consequence after each behavior.
26. Abbreviate MNHT
27. Full form of CTS
28. LSD Stand for
29. DPA Stand for
30. DLS Stand for

PART – B

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

4 x 2 = 8

1. Define life skills
2. What is a body language?
3. What is leadership?
4. Define motivation.

PART – C

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

4 x 3 = 12

1. Difference between morality and ethics.
2. What do you mean by personality development?
3. Define time management
- 4 .What are the types of interview ? Discuss basic tips of job interview
- 5 .What is SWOT Analysis

PART – D

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

2 x 5 = 10

1. Write down the (10) characteristics of good problem solver.
2. What is group discussion and purpose of Group Discussions?
3. Difference between Morals and Ethics.
