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

Duration : 3 Hours   Max. Marks: 60
Course : DPMT   Date : 03.07.2023
Subject : Communication English – II   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.

1. Choose the correct form to complete the sentence: "We _____ be more careful next time."
    a) should   b) shouldn't   c) could   d) can't
2. Which preposition should be used in the sentence: "He is interested _____ learning foreign languages."
    a) at   b) in   c) on   d) by
3. "The meeting will start _____ 9 o'clock."
    a) at   b) in   c) on   d) by
4. Which preposition should be used in the sentence: "He will arrive _____ten o clock."
    a) at   b) in   c) on   d) by
5. 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
6. 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.
7. 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.
8. 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.
9. 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
10. Which article should be used to complete the sentence: "He is _____ honest person."
    a) a   b) an   c) the   d) no article needed
11. 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
12. 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
13. Which type of sentence is this? "She is the girl who won the medal."
    a) simple   b) compound   c) complex   d) none of these
14. Which type of sentence is this? "He loves to play cricket in the evening."
    a) simple   b) compound   c) complex   d) none of these
15. 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.

16. I _____ (see) that movie three times already.
17. She _____ (cook) dinner when the guests arrived.
18. The children _____ (build) a sandcastle at the beach.
19. They _____ (travel) to Spain next summer.
20. We _____ (study) Spanish for two years now.
21. The word "an" is used before words that start with a vowel sound. True/False
22. Prepositions are used to show the relationship between a noun and another word in the sentence. True/False
23. The word "a" is used before words that start with a vowel sound. True/False
24. Prepositions are used to connect words in a sentence. True/False
25. 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 have ....your 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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CENTRAL INSTITUTE OF PETROCHEMICALS ENGINEERING & TECHNOLOGY
HEAD OFFICE : GUINDY, CHENNAI – 600 032.
ACADEMIC CELL
SECOND SEMESTER EXAMINATION – JULY 2023

Duration : 3 Hours
Course : DPMT
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. $\cot 120° =$
   a) $\frac{1}{\sqrt{3}}$ b) $-\frac{1}{\sqrt{3}}$ c) $\frac{1}{3}$ d) $\frac{1}{2}$
9. $\int cosecx\, cotx\, dx =$
   a) secx   b) cosecx   c) -cosecx   d) cotx
10. $\frac{d5}{dx}=$
    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 $\left(\frac{B^I}{A}\right)$, if P(A)=0.4, P(B)=0.5 and $P(B^I \cap A) = 0.15$
    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, $\frac{dy}{dx} + sinx.y = 0$
    a) 2   b) 3   c) 1   d) 0

Write full form of the following
16. PMF
17. S.D.
18. Cisθ

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. $\frac{d\,logx}{dx}=$ ----------------
21. z= $x^2 + xy$, $\frac{\partial z}{\partial x} =$
22. $\int x^{10}dx=$
23. $\int cosxdx =$
24. In probability p+q=1. True /false
25. If $|A|=0$ then A is singular matrix. True/false

26. $\int e^x xdx = x.e^x$. 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. $\int sinxcosxdx =$
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 Demoivre's theorem.
4. Solve $\int logxdx$.
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 $(1-x^2)\frac{d^2y}{dx^2} - x\frac{dy}{dx} + a^2y = 0$
2. Prove $that\ (1 + cos\theta + isin\theta)^n + (1 + cos\theta - isin\theta)^n = 2^{n+1}cos^n\frac{\theta}{2}.cos\frac{n\vartheta}{2}$
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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CENTRAL INSTITUTE OF PETROCHEMICALS ENGINEERING & TECHNOLOGY
HEAD OFFICE : GUINDY, CHENNAI – 600 032.
ACADEMIC CELL
SECOND SEMESTER EXAMINATION – JULY 2023

Duration : 3 Hours
Course : DPMT
Subject : Engineering Chemistry

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. An atom has mass number 30 and atomic number 16. Find the number of electrons.
   (a) 16   (b) 18   (c) 20   (d) 21
2. Who discovered electrons?
   (a) Rutherford   (b) J. J. Thomson   (c) Neil's Bohr   (d) James Chadwick
3. The maximum mass of an atom is concentrated in which of these?
   (a) Nucleus   (b) Neutrons   (c) Protons   (d) Electrons
4. What is the formula for an atomic mass number of an atom?
   (a) Number of protons + number of electrons   (b) Number of neutrons + number of electrons
   (c) Number of protons + number of neutrons.   (d) Both b and c
5. Which of the following substance has a dipole moment more than zero?
   (a) Methane   (b) Water   (c) Carbon dioxide   (d) Nitrogen
6. In the formation of the molecule, which of the following will take part in the chemical combination?
   (a) Cation   (b) Anion   (c) Valence electron   (d) Inner shell electron
7. Which of the following has an ionic bond?
   (a) H_2 (b) O_2 (c) NaCl   (d) None of these
8. Alkalis are _____
   (a) acids, which are soluble in water   (b) acids, which are insoluble in water
   (c) bases, which are insoluble in water   (d) bases, which are soluble in water
9. According to Lowry-Bronsted concept, acid is a substance that
   (a) Accepts a proton   (b) donates a proton   (c) accepts an electron   (d) none of these
10. The indicator used in the EDTA method is:
    (a) Benzene   (b) Ethylene diamine   (c) Erichrome black T   (d) None of these
11. Select the process that used to remove the permanent hardness of water?
    (a) Lime-soda   (b) Ion exchange process   (c) Zeolite process   (d) All of these
12. Which of the following is a secondary fuel?
    (a) Wood   (b) Coal   (c) Coke   (d) None of these
13. "Heat cannot by itself flow from a body at a lower temperature to a body at a higher temperature"- the statement is which of the following law?
    (a) First law of thermodynamics.   (b) Conservation of mass
    (c) Conservation of momentum.   (d) Second law of thermodynamics.
14. The general formula for alkenes is.............................
    (a) C_nH_{2n+2} (b) C_nH_{2n} (c) C_nH_{2n-2} (d) None of these
15. Lead acid battery is a................battery.
    (a) Primary   (b) Secondary   (c) Quaternary   (d) None of these
16. The bond formed by the complete transfer of electrons from metal to non-metal is called ....
17. pH of basic solution is always .... than 7.
18. Acids turn .... litmus solution............. ..
19. The electrode where reduction occurs is called ....
20. The process in which the volume of the system remains constant is called ....
21. Permanent hardness is due to dissolved chlorides and sulphates of calcium and magnesium. (Say True / False)
22. Diesel can be obtained by the fractional distillation of crude oil.   (Say True / False)
23. Buffer solution is used to maintain the pH of the solution. (Say True/ False)
24. Decomposition of higher hydrocarbon molecules into lower hydrocarbons having lower boiling points is known as cracking. (Say True/ False)
25. Density is an example of intensive property. (Say True / False).

Write the full form of the following:
26. pH
27. EMF
Write the name of the following functional groups:
28. -CHO
29. –COOR-
30. -COOH

PART – B
Answer **all** questions (Max. 40 words)   4 x 2 = 8

1. Write the name of an open system.
2. Write the decomposition of LPG?
3. Write the Lewis definition of acid and base.
4. Arrange n-octane, naphthalene, isooctane in increasing order of their knocking properties.

PART – C
Answer any **four** questions (Max. 100 words)   4 x 3 = 12

1. What is Pauli's Exclusion Principle?
2. Write the difference between orbit and orbital?
3. What is water gas? Give its composition.
4. State the second law of thermodynamics.
5. Write the difference between electrolysis and electroplating.

PART – D
Answer any **two** questions (Max. 300 words)   2 x 5 = 10

1. What is hardness of water? Mention different methods for removal of permanent hardness of water. Explain any one.
2. What do you mean by Buffer solution? Define the different types of buffer solutions.
3. Define the covalent bond. What types of bond present in ammonia (NH_3)? Justify your answer.

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Duration : 3 Hours   Max. Marks: 60
Course : DPMT   Date : 06.07.2023
Subject : Computer & Information Technology   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 brain of computer is _____
   a. ALU   b. CPU   c. Memory   d. Control Unit
2. Microprocessors are used as switching devices for _____ generation computers.
   a. First   b. Second   c. Third   d. Fourth
3. Data can be inserted using _____ device.
   a. Input device   b. Output device   c. Memory device   d. All of aboved
4. _____ is a special purpose computer.
   a. Personal computer   b. Automatic teller machine   c. Mini computer   d. Lap-top
5. Which of the following terms is most closely related to main memory?
   a. Non volatile   b. Permanent   c. Control Unit   d. Temporary
6. Which of the following is internal memory?
   a. Disks   b. Pen Drives   c. RAM   d. CD
7. Which of the following is not a valid version of MS Office?
   a. Office XP   b. Office 2003   c. Office 2007   d. None of above
8. The key F12 opens a
   a. Save as dialog box   b. Open dialog box   c. Save dialog box   d. Close dialog box
9. Borders can be applied to
   a. Cells   b. Paragraph   c. Text   d. All of above
10. Which of the following is used to create newspaper style columns?.
    a. Format Columns   b. Insert Table   c. Format Tabs   d. Insert Textbox
11. Which is small single site network?
    a. LAN   b. CAN   c. WAN   d. MAN
12. Error in computer program is called
    a. Crash   b. Virus   c. Bug   d. None of these
13. Yahoo, Google are _____
    a. Internal Sites   b. Computer brand   c. Saturn ring   d. None of these
14. Another word for software is _____
    a. Input   b. Output   c. System   d. Program
15. The _____ file format is a method of encoding pictures on a computer
    a. HTML   b. URL   c. JPEG   d. DOC
16. _____ Language consists of 0's & 1's.
17. The deleted file from a computer will be temporarily moved to _____ location.
18. A graphical image displayed on window screen is called _____
19. Junk e-mail is also called _____
20. To reload a webpage, press the _____ key.
21. Operating system is application software. (Say True or False)
22. Unix is an example of Multiuser OS. (Say True or False)
23. Peripheral devices include output devices only. (Say True or False)
24. Google Chrome is a Web Server. (Say True or False)
25. CTRL+S command is used to save a document. (Say True or False)
26. DOS stands for _____
27. ALU stands for _____
28. CRT stands for _____
29. ASCII stands for _____
30. CD-ROM stands for _____

PART – B
Answer **all** questions (Max. 40 words)   4 x 2 = 8

1. What is barcode reader?
2. What is CPU?
3. How do you save a document in Microsoft Word?.
4. What is operating system?

PART – C
Answer any **four** questions (Max. 100 words)   4 x 3 = 12

1. Explain about Impact printers with an example.
2. Define Volatile and Non-Volatile memory.
3. Describe Network topology.
4. Explain about any two secondary storage devices.
5. Write short notes on HTML.

PART – D
Answer any **two** questions (Max. 300 words)   2 x 5 = 10

1. Explain about generation of computer.
2. What is data transmission media? Explain the types of it.
3. Explain different functions of Operating System.

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

Duration : 3 Hours
Course : DPMT
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.

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