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

Duration : 3 Hours   Max. Marks: 60
Course : DPT   Date : 09.01.2023
Subject : Communication English-I   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

Identify the parts of speech in the following sentences:
1. She is cooking **delicious** meals.
   a. Adjective   b. Preposition   c. Adverb
2. I bought a **beautiful** dress at the mall.
   a. Preposition   b. Adjective   c. noun
3. What is **her** doubt?
   a. Conjunction   b. Preposition   c. Pronoun
4. I left my shoes **under** the table.
   a. Adjective   b. Conjunction   c. Verb
5. On Sundays I **work** from nine to five
   a. Verb   b. Preposition   c. Adverb
6. I want to go to a **university** in the United States.
   a. Adjective   b. Preposition   c. Noun
7. I'm sure I've **met** your girlfriend before.
   a. Verb   b. Preposition   c. Interjection
8. **Well,** I don't think I'll be home before 6.
   a. Interjection   b. Preposition   c. Pronoun
9. Andy knocked on the door **but** nobody answered.
   a. Adverb   b. Adjective   c. Conjunction
10. **After** lunch let's go out for a coffee.
    a. Pronoun   b. Preposition   c. Verb
11. She was wearing really **beautiful** earrings.
    a. Adjective   b. Adverb   c. Noun
12. **Wow**, you have got a great score.
    a. Conjunction   b. Interjection   c. Pronoun
13. She **quickly** packed her bag and left.
    a. Noun   b. Adjective   c. Adverb
14. **Take** your first left then go over the bridge.
    a. Noun   b. Preposition   c. Verb
15. He thinks **we** will arrive at roughly 5 p.m.
    a. Pronoun   b. Preposition   c. Conjunction

Fill in the blanks with suitable answers:
16. I _____ to the mall after school. (go / went)
17. My Sister _____ play tennis now. (can / could)
18. My brother _____ a bear an hour ago. (see / saw)
19. _____ Tom visit his grandmother last night? (Do / Did)
20. Do you _____ chocolate milk? (like / likes)

Write Abbreviations for the following
21. WWW
22. ATM
23. UGC
24. AICTE
25. CD
26. A plural subject needs a singular verb. (True / False)
27. The terms "its" and "it's" have different meanings. (True / False)
28. Adjectives usually come before a noun. (True / False)
29. Every sentence must have a subject and an object. (True / False)
30. In British English, a collective noun is usually treated as plural. (True / False)

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

1. Frame sentences using the following Idioms and Phrases:
   a. Sailing in the same boat
   b. Once in a blue moon
2. Write suitable prefix for the following words:
   a. counter
   b. look
3. Write suitable suffix for the following words:
   a. Develop
   b. Conscious
4. Match the following:

Column A	Column B
Causing death	Aristocracy
A religious war	Fugitive
Government by the nobles	crusade
One who runs away from justice	Fatal

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

1. Define Noun. Explain the types of nouns with suitable examples.
2. Differentiate Adjective and Adverb with examples.
3. Explain Coordinating Conjunctions with examples.
4. Write a dialogue between you and a shopkeeper regarding the latest brands and arrivals in the shop.
5. Spot the errors in the following sentences:
   a. I prefer coffee than tea
   b. One of these cycle is damaged
   c. Neither Tom nor Maggie are available
   d. He is tallest girl in the class

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

1. Write a letter to the municipal officer complaining about the poor sanitary condition of your locality.
2. Write a general essay on 'Deforestation'.
3. The following is the number of hours spent by a child in a day. Draw a pie Chart based on the given data:

Activity	Sleeping	Playing	School	Sports	Dance	Eating
No. of. hours	8	3	6	3	2	2

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

Duration : 3 Hours   Max. Marks: 60
Course : DPT   Date : 10.01.2023
Subject : Workshop Mathematics   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. A quadratic equation $ax^2 + bx + c = 0$ has no real roots, if
   (a) $b^2 - 4ac > 0$ (b) $b^2 - 4ac = 0$ (c) $b^2 - 4ac < 0$ (d) $b^2 - ac < 0$

2. The equation $x^2 + 1 = 2x - 3$ is a
   (a) Linear equation   (b) Quadratic equation   (c) Cubic equation   (d) None of theses

3. The quadratic equation $x^2 - 4x + 4 = 0$ has
   (a) Two equal roots   (b) Two real and unequal roots   (c) No real roots   (d) None of these

4. The quadratic formula to find the roots of a quadratic equation $ax^2 + bx + c = 0$ is given by
   (a) $\frac{-b \pm \sqrt{b^2 - ac}}{2a}$ (b) $\frac{-b \pm \sqrt{b^2 - 2ac}}{2a}$ (c) $\frac{-b \pm \sqrt{b^2 - 4ac}}{4a}$ (d) $\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

5. $\frac{1}{2} + \frac{1}{2}$ is equal to
   (a) 1   (b) 2   (c) $\frac{5}{2}$ (d) None of theses

6. Evaluate 10% of 60 + 15% of 80.
   (a) 5   (b) 6   (c) 15   (d) 18

7. If n is a positive integer, then the number of terms in the expansion of $(x + y)^n$ is:
   (a) n (b) $n + 1$ (c) $n + 2$ (d) None of these

8. The sum of the binomial coefficients in the expansion of $(1 + y)^4$ is:
   (a) 4   (b) 8   (c) 16   (d) 32

9. n_{C_n} is equal to
   (a) 1   (b) 0   (c) n   (d) None of these

10. If the slope of a straight line is $\frac{1}{2}$, then the slope of the line perpendicular to it, is equal to;
    (a) 1   (b) -1   (c) 2   (d) – 2

11. Which of the following equation represent a circle?
    (a) $x^2 + y^2 = 1$ (b) $x^2 + 2y^2 + 2x + 2y + 1 = 0$
    (c) $2x^2 + y^2 + 2x + 2y + 1 = 0$ (d) $x^2 + y^2 + 2xy + 2y + 1 = 0$

12. Center of the circle $(x - 2)^2 + (y + 3)^2 = 4$ is:
    (a) $(2, 3)$ (b) $(2, -3)$ (c) $(-2, 3)$ (d) $(-2 - 3)$

13. 180^0 is equal to _____ radians.
    (a) $\frac{\pi}{2}$ (b) $\frac{\pi}{4}$ (c) π (d) 2π

14. $\sin^2 90^0 + \cos^2 90^0 =$ _____.
    (a) 1   (b) -1   (c) 0   (d) 2

15. $\cos(90^0 + A)$ is equal to:
    (a) $\sin A$ (b) $- \sin A$ (c) $\cos A$ (d) $- \cos A$

16. The sum of the roots of a quadratic equation of the form $ax^2 + bx + c = 0$ is _____.

17. If the product of roots of the quadratic equation $x^2 + 8x + k = 0$ is 4, the value of k is _____.

18. If radius of a circle is $5\ cm$, then diameter is _____ cm.

19. If two straight lines are perpendicular to each other, then the product of their slopes is equal to _____.

20. $\cos(180^0) =$ _____.

21. If the two straight lines are parallel. Then their slopes are equal.   (True/False)

22. The maximum number of roots for a quadratic equation is 2.   (True/False)

23. A quadratic equation $ax^2 + bx + c = 0$ has equal roots, then $b^2 - 4ac > 0$.   (True/False)

24. The diameter divides the circle into two equal parts, each part is called Semicircle.   (True/False)

25. $\sin(-A) = \sin(A)$.   (True/False)

26. Area of circle of radius 4 cm is _____.
27. $\sin(A + B) =$ _____.
28. $\cos(A + B) =$ _____.
29. $1 + \tan^2 A =$ _____.
30. $\sin^2 A + \cos^2 A =$ _____.

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

1. Find the value of $\cos 90^0 + \sin 90^0$.
2. Determine the value of p for which the quadratic equation $x^2 + 2x + p = 0$ has equal roots.
3. Find the intercepts of the line $2x + 4y = 8$.
4. If circumference of a circle is 4π cm, then find the radius of the circle.

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

1. Find the value of $\sin(75^0)$.
2. Find the combined equation of the straight lines whose separate equations are $x + y + 4 = 0$ and $x + 2y - 4 = 0$.
3. Find the 4th term in the expansion of $(x + 2y)^6$.
4. Solve: $x^2 + 6x + 6 = 0$ by using the quadratic formula.
5. If the equation of circle is $x^2 + y^2 + 4x + 4y + 2 = 0$, then find the radius and center of the circle.

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

1. The area of the circle is 16π square units. If the centre of the circle is $(1, 2)$, then find the equation of the circle.
2. Find the middle term in the expansion of $(2x + 3y)^7$.
3. If A, B are acute angles such that $\sin A = 3/5$, $\cos B = 4/5$, find $\cos(A + B)$.

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HEAD OFFICE : GUINDY, CHENNAI – 600 032.
ACADEMIC CELL
FIRST SEMESTER EXAMINATION – JANUARY - 2023

Duration : 3 Hours   Max. Marks: 60
Course   : DPT   Date : 11.01.2023
Subject : Engineering Chemistry   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. Particle present in an atoms are
   a) 2   b) 3   c) 9   d) 10
2. Neutral pH is =.........
   a) 7   b) 14   c) 10   d) 12
3. An ionic bond is formed between.
   a) Two metals atoms   b) Two non-metals atoms
   c) One metal atom and one non-metal atom   d) One metal atom and and one non-metalloid atom
4. The maximum number of electrons that can be accommodated in d-subshellis..................
   a) 2   b) 4   c) 6   d)10
5. Covalent or non-polar bond is formed by ....of electron.
   a) Accepting   b) donating   c) mutual sharing   d) none of these
6. The general formula for alkaneis...........................
   a) C_nH_{2n+2} b) C_nH_{2n} c) C_nH_{2n-2} d) C_nH_{2n+4}
7. For the preparation of 1000 ml of 1 M solution of sodium carbonate, the amount of Na_2CO_3 needed is..............
   a)53 g   b)106 g   c) 10.6g   d) 5.3 g
8. In a chemical bonding the atom attains ....configuration.
   a) Partially filled   b) half-filled   c) vacant   d) octet or inert gas
9. According to Lowry-Bronsted concept, an acid is a substancethat......................
   a) acceptsa proton   b) releasesaproton   c) acceptsaelectron   d) releases aelectron
10. d- Block elements are also called .... Metals.
    a) alkali   b) alkaline   c) transition   d) alkaline earth
11. Bohr's model can successfully explain the structure of hydrogen containing..........electron.
    a) 1   b) 2   c) 3   d) 4
12. The high boiling point of alcohol is due to......................
    a) Covalent bonding b) Ionicbonding   c) Hydrogenbonding   d) Coordinatebonding
13. Which one of the following is the most polar ....
    a) H-F   b) H-Cl   c) H-Br   d) H-I
14. Bonding between a metal ion and a ligand is known as ....bond.
    a) Covalent bonding b) Ionicbonding   c) Hydrogenbonding   d) Coordinatebonding
15. .... & .... are the two types of hydrogen bonding.
    a) Inter and intramolecular   b) Ionic and covalent   c) ionic and coordinate   d) None of the above
16. The ionic product of water is.......................
17. Solution of pH = 9 is _____.
18. Polar compounds are soluble in ....solvents.
19. The taste of an acidis...................
20. .... Red litmus paper turns blue colour, if it issolution.
21. Full form of LPG is Liquified Petroleum Gas.(True /False)
22. The Major quantity of the solution is called as solvent. (Say True orFalse)
23. Buffer solution is used to Keep the pH not remains same .... (Say True orFalse)
24. Sigma Bond is weaker than pi bond .(Say True orFalse)
25. Hard water can be used for washing purposes (Say True orFalse)
26. Full form of ppb
27. Full form of ppm
28. Full form of EDTA is........
29. What does "VC" stands for?
30. Full form of LPG........

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

1. Define molecule with example.
2. Which type of bond is responsible liquid form of water and give thereason.
3. Calculate the number of protons, electrons and neutrons in $_{11}Na^{23}$
4. Classify the fuel.

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

1. Explain electronic arrangement in atom suitable diagaram
2. Explain second law of thermodynamics
3. Define hydrogen bond.
4. Write the method of removal of temporary hardness of water
5. Define the EMF of cell with suitable formula

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

1. Write the method of removal of permanent hardness of water with suitable diagarm
2. Explain ionic covanent and coordinate bond with suitable example
3. Define buffer and molarity with formula

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

Duration : 3 Hours
Course : DPT
Subject : Computer & Information Technology

Max. Marks: 60
Date : 12.01.2023
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. Which machine needs internet connection mandatory for finger access?
   (a) CPU   (b) Bio-Metric   (c) Bar Code Reader   (d) All of these
2. Thesaurus tool in MS Word is used for
   (a) Grammar options (b) Spelling suggestions (c) Antonym and Synonym words   (d) All of above
3. Which of the following line spacing is invalid?
   (a) Single   (b) Double   (c) Justified   (d) Multiple
4. What is the use of keystroke 'Ctrl + U'?
   (a) Increase font size   (b) Inserts an underline
   (c) Indicates text should be bold   (d) Undo the previous command
5. Installation and removal of programs are managed by_____.
   (a) Drive C   (b) Drive D   (c) Control Panel   (d) None of these
6. _____ tools are used to play audio and video files.
   (a) VLC media player   (b) Windows media player   (c) MP4   (d) Both (a) & (b)
7. In MS-Word, the ruler helps_____
   a. To set tabs   b. To set indents   c. To change page margins   d. All of the above
8. 6. Which of the following is used for modulation and demodulation?
   a. Modem   b. Protocols   c. Gateway   d. Multiplexer
9. MICR stands for_____
   a. Magnetic Ink Character Recognition   b. Magnetic Ink Code Reader
   c. Magnetic Ink Cases Reader   d. None of the above
10. 1 GB = _____
    (a) 1000 MB   (b) 100 MB   (c) 1000 KB   (d) 100 GB
11. Microprocessors as switching devices are for which generation computers
    (a) First Generation   (b) Second Generation   (c) Third generation   (d) Fourth Generation
12. 7. The brain of any computer is _____.
    (a) ALU   (b) CPU   (c) Memory   (d) Control Unit
13. PDF stands for _____.
    (a) Portable Document File   (b) Portable Document Format
    (c) Printable Document Format   (d) Printable Document File
14. 5. UPS stands for _____
    (a) Unit Power Source   (b) Uninterruptible Power Supply
    (c) Unique Point Supply   (d) Uninterruptible Power Source
15. WAN stands for _____.
    (a) Wide Air Network   (b) Whole Area Node   (c) Wide Area Network   (d) Whole Area Network
16. A graphical image displayed on window screen is called _____
17. The keystrokes 'Ctrl + I' is used to _____
18. The two kinds of main memory are _____ & _____
19. HTML stands for _____.
20. _____Language consists of 0's & 1's.
21. Operating system is application software. (True or False).
22. Transistor technology belongs to Second Generation of computers? (True or False).
23. A HUB is a networking device. (True or False).
24. Worksheet belong to Power Point. (True or False).
25. Printer is an Input Device. (True or False).

Write full form of following:
26. MU –
27. CUI –
28. TCP/IP
29. LAN –
30. IC –

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

1. What is chart in MS Excel? Name three types of charts?
2. Explain about control unit.
3. List out input and output devices.
4. What is task bar?

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

1. How do you create a new presentation?
2. What is Protocol? Explain http and ftp?
3. What are the Advantages & Disadvantages of Computer?
4. What is MS-Power point?
5. What is ipv4?

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

1. What is topology? Explain the Different Types of Topologies.
2. What is Network? Explain types of networks.
3. What is CPU and explain about different parts?

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HEAD OFFICE : GUINDY, CHENNAI – 600 032.
ACADEMIC CELL
FIRST SEMESTER EXAMINATION – JANUARY - 2023

Duration : 3 Hours
Course : DPT
Subject : Environmental Sciences

Max. Marks: 60
Date : 13.01.2023
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 source of energy in an ecosystem
   a) ATP   b) Sunlight   c) DNA   d) RNA
2. The Taj Mahal is threatened due to effect of
   a) Oxygen   b) Hydrogen   c) Chlorin   d) Sulphur Dioxide
3. The part of the earth and its atmosphere in which organism live is
   a) Biosphere   b) Lithosphere   c) Hydrosphere   d) Biomass
4. Gas released during Bhopal tragedy was
   a) Methyl isocyanate b) Potassium isocyanate c) Isocyanate   d) All of them
5. The concept of ecological pyramid was first proposed by
   a) Charles Elton   b) Hackle   c) Odum   d) Taylor
6. Which of the following is not recycled in the Biosphere
   a) Energy   b) Nitrogen   c) Carbon   d) Water
7. Soil infertility is caused by
   a) Shifting cultivation b) Overgrazing   c) Industrialization d) All the above
8. Instrument used to measure earthquake is known as
   a) Seismograph   b) Barometer   c) Ammeter   d) Anemometer
9. Which of the following diseases is not waterborne disease
   a) Malaria   b) Dysentery   c) Diarrhea   d) Cholera
10. Chipko movement is associated with
   a) Water   b) Soil   c) Forest   d) Sound
11. Which of the following is secondary pollutant
   a) Carbon di oxide   b) methene   c) ozone   d) sulphur di oxide
12. Harmful trace metals in fly ash
   a) Antimony   b) Cadmium   c) Arsenic   d) All of them
13. Montreal Protocol aims at
   a) Control of co_2 emission   b) reduction of ozone depleting substances
   c) Biodiversity conservation   d) control of water pollution
14. Renewable energy resource is
   a) Coal   b) Petroleum   c) solar energy   d) Natural gas
15. Who said "Nature can provide for all the needs of human but not for their greed"
   a) J. L Nehru   b) Sardar Patel   c) Indira Gandhi   d) Mahatma Gandhi
16. Amrita Devi is known for............
17. Formation of ozone hole is maximum over.............
18. Organism that feeds primary consumer only is called............
19. Silent valley Project is located in..........
20 Human Rights Day is celebrated ....
21 Term Ecology was coined by Hackle   (true/false)
22. Energy flow in ecosystem is unidirectional (true/false)
23. World Environment Day is celebrated on 5 June (true/false)
24. 1Decible is equal to 1000Htz   (true/false)
25. Birds and Animals are the example of Abiotic Environment (true/false)
26. EIA Refers to_____
27. NEPA refers to_____
28. COD refers to_____
29. NDRF refers to_____
30. MAB stands for_____

PART – B
Answer all questions (Max. 40 words)

4 x 2 = 8

1. Write the type of food pyramid?
2. What do you mean by Biodiversity?
3. Name different layer of Atmosphere?
4. Explain Renewable and Non- renewable energy sources with their Example?

PART – C
Answer any four questions (Max. 100 words)

4 x 3 = 12

1. Discuss the salient features of Wildlife Protection Act 1972?
2. Describe the harmful effects of Noise Pollution?
3. Brief note over different phases of disaster?
4. What is waste water treatment?
5. Write short note over causes and effects of earthquake?

PART – D
Answer any two questions (Max. 300 words)

2 x 5 = 10

1. Describe Rain water harvesting and provide two ways for rainwater harvesting?
2. What is the effect of human activities on environment? Discuss the key features of the Environmental Protection Act (1973)?
3. Write short note on i) Water logging   ii) Soil erosion   iii) Acid Rain   iii) Ozone layer Depletion

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