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

Duration : 3 Hours   Max. Marks: 60
Course   : DPT   Date : 08.01.2024
Subject   : Communication English-I   Time : 02.00 p.m. to 05.00 p.m.

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

PART – A
Answer **all** questions   12 x 1 = 12

1. Choose the correct Modal from the following: ___ we go home now, Sir?
         a. Can   b. Would   c. May   d. Shall
2. Choose the correct verb form of Pronoun: _____ are you speaking to?
         a. Whom   b. Which   c. Who   d. What
3. Choose the correct phrasal verb: 'Though we have sorted out our differences, she still keeps _____ me,' Marx said dolefully.
         a. Going with   b. going for   c. going at   d. none of the above
4. I am not feeling hungry, I _____ (take) heavy breakfast. (Correct Tense Form)
5. Don't worry; we are prepared _____ everything. (Correct Preposition)
6. Give up smoking _____ you will have to face dire consequences. (Correct Conjunction)
7. Adjectives are the parts of speech that qualify verbs and adverbs. (True/False)
8. 'Jury' is a Compound Noun. (True/False)
9. Exclamation Marks can be used after Interjections. (True/False)
10. Expand: BIS
11. Expand: AICTE
12. Expand: CSTS

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

1. Define Clarity in communication.
2. What is Visual Communication?
3. Define Auxiliary Verbs.
4. What is an Abstract Noun?

PART – C
Answer any **six** questions (Max. 100 words)   6 x 4 = 24

1. Explain Noun and its different types using suitable examples.
2. Explain the use of Capital Letters in English using examples.
3. What is Conciseness in communication? How can effective conciseness be maintained?
4. How can someone build a strong presence with Visual Communication?
5. Explain Preposition and its different types.
6. What is a Sentence? Explain different components of sentence in English language.
7. Define Verb and its different types using suitable examples.

PART – D
Answer any **two** questions (Max. 300 words)   2 x 8 = 16

1. Write a dialogue between a father and a son on the growing use of internet and the threat to cyber security.
2. Write an essay on the topic: COVID – 19.
3. Write a letter to the Editor of a local newspaper highlighting the problem of improper garbage dump and littering in your locality.

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ACADEMIC CELL
FIRST SEMESTER EXAMINATION – JANUARY - 2024

Duration : 3 Hours   Max. Marks: 60
Course   : DPT   Date : 09.01.2024
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   12 x 1 = 12

1. The quadratic equation $x^2 + 3x + 2 = 0$ has
   (a) Two equal roots   (b) Two real and unequal roots   (c) No real roots   (d) None of these
2. Evaluate 20% of 90 + 30% of 80.
   (a) 40   (b) 42   (c) 80   (d) 82
3. 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.
4. If radius of a circle is $10\ cm$, then the area of circle is _____ cm^2.
5. The area of a square of length 4 cm is equal to _____.
6. The volume of a cube of side 2 cm is equal to _____.
7. If the two straight lines are parallel. Then their slopes are equal.   (True/False)
8. A quadratic equation $ax^2 + bx + c = 0$ has equal roots, then $b^2 - 4ac = 0$.   (True/False)
9. The Homogeneous equation $ax^2 + 2hxy + by^2 = 0$ represents two straight lines passing through the origin, if $h^2 - ab < 0$.   (True/False)
10. $\sin^2 30^0 + \cos^2 30^0 =$ _____.
11. $1 + \tan^2 A =$ _____.
12. $\sin(A + B) =$ _____.

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

1. Find the length of the edge of a cube whose surface area is given as $54\ cm^2$
2. Determine the value of k for which the quadratic equation $x^2 + 4x + k = 0$ has equal roots.
3. Find the combined equation of lines y = x and y + x = 0
4. If circumference of a circle is 16π cm, then find the radius of the circle.

.   **PART – C**
Answer any **six** questions (Max. 100 words)   6 x 4 = 24

1. The area of a rhombus is 240 cm^2 and one of the diagonals is 16 cm. Find the other diagonal.
2. Find the angle between the pair of straight lines represented by the equation $12x^2 - 10xy + 2y^2 = 0$
3. Find the 2th term in the expansion of $(x + 2y)^4$.
4. Solve: $x^2 + 6x + 5 = 0$ by using the quadratic formula.
5. If the equation of circle is $x^2 + y^2 + 2x + 6y + 2 = 0,$ then find the radius and center of the circle.
6. If A, B are acute angles such that $\sin A = 3/5$, $\cos B = 4/5$, find $\sin(A + B)$.
7. Find the volume of cylinder of radius 2 cm and height 4 cm.

PART – D
Answer any **two** questions (Max. 300 words)   2 x 8 = 16

1. The area of the circle is 16π square units. If the centre of the circle is $(2, 3)$, then find the equation of the circle.
2. Find the middle term in the expansion of $(x + 2y)^6$.
3. Find the value of $\tan(15^0)$

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ACADEMIC CELL
FIRST SEMESTER EXAMINATION – JANUARY - 2024

Duration : 3 Hours   Max. Marks: 60
Course   : DPT   Date : 10.01.2024
Subject   : Engineering Chemistry   Time : 02.00 p.m. to 05.00 p.m.

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

PART – A

Answer **all** questions   12 x 1 = 12

1. The maximum number of electrons that can be accommodated in an orbit…………………..
      a) $2n$ b) n^2 c) $2n^2$ d) $2n+1$
2. f- Block elements are also called ………. Metals.
      a) alkali   b) inner transition   c)transition   d)alkaline earth
3. Enthalpy is an example for………….. Property.
      a) Isothermal   b) adiabatic   c) intensive   d) extensive
4. The most electronegative element in the periodic table is…………………..
5. A beaker containing hot water, it is the example of ………..thermodynamic system.
6. Methane is a major constituent of …………..
7. Sigma Bond is weaker than pi bond. (Say True or False)
8. Catenation is the property of carbon atom - (Say True or False).
9. In electrochemical cell - electrical energy is converted in to chemical energy. (Say True or False)
10. TEL stands for _____
11. EBT stands for _____
12. CNG stands for _____

PART – B

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

1. What is meant by Ionic bond? Give an example.
2. Define Isotopes with an example?
3. What is meant by electrolysis?
4. Define knocking? Give one example of anti-knocking component.

PART – C

Answer any **six** questions (Max. 100 words)   6 x 4 = 24

1. Describe the concept of Lewis acid and base with examples
2. Explain the construction and working of Daniel cell?
3. What are the difference between orbit and orbitals?
4. Define soft water? Explain any one method of softening of hard water.
5. What are the difference between Reversible and Irreversible process?
6. Write the functional groups of structure
    i). Alcohol   ii). Ketone   iii). Aldehyde   iv). Carboxylic Acid
7. Define fuel and mention the characteristics of good fuels.

PART – D

Answer any **two** questions (Max. 300 words)   2 x 8 = 16

1. Define electrovalent bond? Explain the formation of sodium chloride (NaCl).
2. Explain various thermodynamic processes.
3. What do you mean by Isomerism? Explain the Structural Isomerism and Stereoisomerism.

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ACADEMIC CELL
FIRST SEMESTER EXAMINATION – JANUARY - 2024

Duration : 3 Hours   Max. Marks: 60
Course   : DPT   Date : 11.01.2024
Subject : Computer & Information Technology   Time : 02.00 p.m. to 05.00 p.m.
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(DO NOT CHANGE SEQUENCE OF QUESTION NUMBER IN ANSWER SCRIPT)
PART – A
Answer **all** questions   12 x 1 = 12

1. CD Stands for _____ Disc?
    (a) Compact Disc   (b) Computer Disc   (c) Dial Versatile Disc
2. First Generation computer used _____ for memory
    (a) Vacuum Tube   (b) Silicon Chip   (c) Magnetic drum   (d) RAM
3. MS Excel is using for Making Notes. Say True or False
4. To select a paragraph using mouse click six numbers of left clicks are required. Say True or False
5. In Word, the mailing list is known as the_____
6. Ctrl+I' is used for _____
7. CAT-6 cable is considered a _____ communication channel.
8. The default location of OS files in a computer is C Drive. Say True or False
9. ROM stands for _____
10. CPU Stands for _____
11. Ctrl+A' is used for _____
    (a) Paste Document   (b) Print Document   (c) Open Document   (d) Select Document
12. RAM stands for _____?

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

1. Explain Font
2. Explain I) Mouse
3. What is the meaning of term 'display'?
4. What is HTTP? Explain.

PART – C
Answer any **six** questions (Max. 100 words)   6 x 4 = 24

1. Write down 4 Names of operating software.?
2. What is the process for copying one document to another place? Explain path of it.
3. Explain WAN & MAN in detail?
4. Explain: - I) Monitor II) Paint
5. Explain :- I) HTML   II) Page Alignment
6. Explain MS Office in brief?
7. Explain :- I) Printer   II) Speaker

PART – D
Answer any **two** questions (Max. 300 words)   2 x 8 = 16

1. Explain PowerPoint in detail. What is the procedure to creating a slide? Explain with path?
2. What are generations of computer? Explain in details.
3. What is MAN? Explain with diagram?

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ACADEMIC CELL
FIRST SEMESTER EXAMINATION – JANUARY - 2024

Duration : 3 Hours   Max. Marks: 60
Course   : DPT   Date : 12.01.2024
Subject : Environmental Sciences   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

Choose the correct option:
1. The source of energy in an ecosystem is
   a) ATP   b) Sunlight   c) D.N.A   d) R.N.A
2. Which of the following is the major cause of pollution?
   a) Plants   b) man   c) fungi   d) hydrocarbon gases
3. The major pollutant from auto mobile exhaust is
   a) NO   b) CO   c) SO_2 d) Soot

Fill in the blanks with appropriate words:
4. …………………is the most abundantly available fossil fuel.
5. Herbivores are…………………………… consumers.
6. Bhakra Nangal is an important………..station in India.

Say True or False
7. Biosphere is made of atmosphere, hydrosphere, and lithosphere. Say True or False
8. The movement of water from the surface of plants into the atmosphere by a process called transpiration. Say True or False
9. A mineral is a naturally occurring substance, represent by a chemical formula Say True or False

. **Write the full form**
10. CO_2 …………………..
11. MAB stands for ……………………………………..
12. W.W.F stands for………………………………

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

1. What is Environment?
2. Draw grassland food Chain.
3. Give two examples of Conventional Sources and Non Conventional Sources.
4. What are autotrops?
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PART – C
Answer any **six** questions (Max. 100 words)   6 x 4 = 24

1. Describe the structure of ecosystem.
2. Difference between renewable and non renewable resources.
3. What is acid rain also explain its effect.
4. Briefly explain green revolution.
5. What are the causes of water pollution?
6. Explain briefly the importance of food chain and food web.
7. How can minerals be conserved?

PART – D
Answer any **two** questions (Max. 300 words)   2 x 8 = 16

1. What are the objectives of Environment Protection Act?
2. What is a forest resource? Explain the function of forest resources.
3. Explain in details the effect of human activities on Environment.

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