

IMU CET

Question Paper - 2022

Memory Based



Dear students

This is a memory based question paper.

We have compiled this question paper on the basis of questions shared by students, after the exam. Also, answers are unofficial.

We hope this helps you in clearing your exam with an excellent score.

It is an honor for us to be a part of your journey towards success.

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MATHS

Q1. Two or more vectors having the same initial point.

Q2. A monoid becomes a group if it is also satisfying the

Q3. conjugate of $(i - i^2)$

Q4. All possible matrix of order 2×2 with entries a,b,c

Q5. $\int (e^x/e^x + 1)dx$

Q6. Value of $i^2 + i^4 + i^6 + \dots + i^{2n}$

Q7. If a,b,c are in A.P. as well as G.P. then

Q8. feasible region in set points which satisfy

$$A = \begin{bmatrix} 1 & x & 3 \\ 1 & 3 & 3 \\ 2 & 4 & 4 \end{bmatrix}$$

Q9. If is adjoint of 3×3 matrix A and $|A|=4$, then $x = ?$

Q10. Differential equation obtained by eliminating a and b from $y = ae^{2x} + be^{-2x}$ is

Q11. $(x+2)+(y-3)=7+5i$, x and y is =?

Q12. Solution obtained by giving perpendicular value to an arbitrary general solution of a difference equation is called

Q13. $\cos^{-1}(\cos 7\pi/6)$

Q14. Objective function of linear programming possible is

Q15. If $z = 3+4i$, imaginary part = ?

Q16. Modulus of $4 + 3i = ?$

Q17.

Q18. If $\vec{a} = 3\hat{i} + 4\hat{j} - 12\hat{k}$ and $\vec{b} = -2\hat{i} - 2\hat{j} + 10\hat{k}$ then find $\vec{a} + \vec{b} =$

Q19. Reduction formula for $\int \sin^m x dx, m \in \mathbb{Z}^+$

Q20. 3 coins are tossed the probability of getting to heads

Q21. $1/3\omega$ of a complete rotation clockwise is

Q22. Let R be relation in set N given by $R = \{(a,b): a = b - 3, b > 7\}$

Q23. Value of $[\hat{i} + \hat{j} + \hat{k}, \hat{j} + \hat{k}, \hat{k} + \hat{i}] = ?$

Q24. Angle between straight line and $x^2 + 4xy + 3y^2 = 0$

Q25. Absolute maximum value of $f(x) = 2x^2 - 3x + 1$ on $[1,3]$

Q26. Order of $[1, 2, 3] \begin{bmatrix} 1 & -1 & 3 \\ 4 & 2 & 1 \\ 7 & 3 & 2 \end{bmatrix} \begin{bmatrix} -1 \\ 2 \\ 1 \end{bmatrix} = ?$

Q27. If $n \times (A \times B) = 16$ and $A = \{1, 2, 3, 4\}$ then $n(B)$ is

Q28. If a, b, c are in AP then

Q29. Probability of certain event is

Q30. Order and degree of $\left[1 + \left(\frac{dy}{dx}\right)^2\right]^3 = k \left(\frac{d^2y}{dx^2}\right)$

Q31. Area of region bounded by $3x - 2y + 6z = 0$, $x = 1$ and $x = -3$ and x -axis?

Q32. Centre of the circle $3x^2 + 3y^2 - 2x + 6y - 6z = 0$

Q33. Two or more circles having the same center = ?

Q34. Anti-derivative of $\left(3\sqrt{x} + \frac{1}{\sqrt{x}}\right) = ?$

Q35. Vectors $3\hat{i} + 4\hat{j} + 2\hat{k}$ and $a\hat{i} + b\hat{j} + c\hat{k}$ are 1^{lay} then

Q36. If $f: \mathbb{R} \rightarrow \mathbb{R}$ defined by $f(x) = 3x + 5/2$ is an invertible function then find $f^{-1}(x) = ?$

Q37. Probability of losing a game if $P(\text{winning}) = 0.11$

Q38. Equation $6x^2 + 9y^2 + 12x - 36y - 12 = 0$ represents

Q39. If $\Delta_1 = \begin{vmatrix} 1 & 4 & 3 \\ -1 & 1 & 5 \\ 3 & 2 & -1 \end{vmatrix}$ and $\Delta_2 = \begin{vmatrix} 2 & 8 & 6 \\ -2 & 2 & 10 \\ 0 & 4 & -2 \end{vmatrix}$ then = ?

Q40. In a binomial distribution if p, q, n are probability of success, failure and number of trials respectively, then variance = ?

Q41. If f is an even function then

$$\int_{-a}^a f(x) dx = ?$$

Q42. If pt. Lies $ax^2 + 2hxy + by^2 = 0$ are 1^{lar} then coefficient of $x^2 + coeff. of y^2 = ?$

Q43. Product of $s(s-a)(s-b)(s-c) = ?$

Q44. Function $f(x) = (x + 2)^3 - (x - 2)^3$ represent a function which is

Q45. If $R = (a, a^3)$; a is a prime number less than 7 } be a relation, find the range of R.

Q46. Shape of normal curve is = ?

Q47. Derivative of vectors

$$2\vec{a} - 3\vec{b}, \text{ vector } \vec{a} = \hat{i} + \hat{j} + 2\hat{k}$$

$$\vec{b} = 3\hat{i} + 4\hat{j} + \hat{k}$$

CHEMISTRY

Q1. Order of Shielding effect?

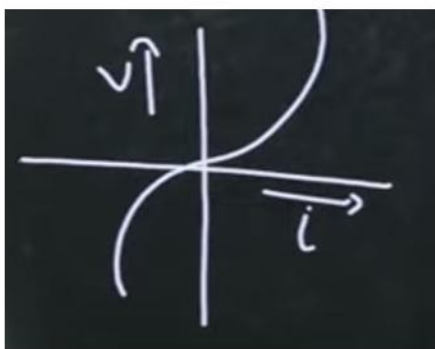
Q2. When we heat a reaction (solid is in equilibrium with liquid) what will happen?

Q3. Common oxidation state for lanthanides?

- Q4. Which will have the highest magnetic moment?
- Q5. When NaNO_3 is heated at 800 degree celsius product?
- Q6. When heat is given to the system and work is done by the system, write the first law of thermodynamics?
- Q7. Ores of Aluminium?
- Q8. Calculate Ecell when hydrogen electrode is dipped in solution of pH=3?
- Q9. The rate of diffusion of oxygen and hydrogen is?
- Q10. On heating Si at high temperature it will act as?
- Q11. Octahedral geometry has hybridization?
- Q12. The reaction rate of multiple step reactions is determined by which reaction?
- Q13. Phenol react in presence of NaOH and give salicylaldehyde?
- Q14. Number of antibonding in O_2^{2-} ?
- Q15. Sugar present in RNA?

PHYSICS

- Q1. Why do we laminate the core of the transformer?
- Q2. Total flux passing through the area in the charged unit?



Q3.

This source at ohmic or non ohmic?

Q4.Federal Law is based on?

Q5.How can we combine the resistance?

Q6. If two charges are placed in a certain distance, then find the force?

Q7. Photo emission?

ENGLISH

One word Substitution

1.Pragmatic : Dealing with problems in a practical way

2.Cardiology: Study of heart -related disorder

3.Pessimist: Tendency to expect only bad things are going to happen

4.Inquisitive:Interested in finding out about the different things

5.Idiosyncrasy: An individual characteristic that makes someone different

6.Capitalism: An economic system in which businesses are owned and run by individuals and not by the state

Idioms and Phrases

1.Face to face

(with something) being directly in front of and facing someone or something

2.Playing Games:

Deal with someone or something in a way that lacks due seriousness

Deal decisively with a difficult or dangerous situation.

Synonyms

1.Allotting:To give a share of work/time.

Distribution

2.Sob:To cry

Weep

3.Erroneous:not correct

Wrong, incorrect, inaccurate

4.Notion:An idea

Belief,concept,view

5.Serene:calm and peaceful

Calm,composed, cool

6.Tote:A bag to carry things

Bear, carry

7.Distinct: clearly different

Clear cut, well defined

8. Coerce:pressure

Browbeat, bully, suppress

9. Despair: hopelessness

Melancholy, unhappiness

Antonyms

1.Shrink: to become smaller

Expand, Increase

2.Belittle:To make someone feel less important/Criticize

Praise, laud

3.Enormous: Very large, huge, gigantic

Insignificant, minuscule, miniature

4.Exodus: Mass departure of people

Influx, arrival

5.Victorious:Successful, Winning

Failing, Losing, Unsuccessful

6.Alert: Attentive

Careless, sluggish

Active/Passive

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