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# MHT CET 2024 Question Paper May 4 Shift 1 PCM

Maths Questions

**Ques 1. Maximize z = x + y subject to x + y <= 10 3y - 2x <= 15 x <= 6 x, y >= 0 Find the maximum value.**

**Ans.** 10

**Ques 2. The equation $(\cos p-1)x^2 + (\cos p)x + \sin p = 0$, where x is a variable with real roots. then the interval of p may be any one of the following.**

**A. $(0,2\pi)$**
**B. $(-\pi, 0)$**
**C. $(-\pi/2, \pi/2)$**
**D. $(0, \pi)$**

**Ans.** D

**Ques 3. If AX = B, where A = $\begin{bmatrix} 1 & -1 & 1 \\ 2 & 1 & -3 \\ 1 & 1 & 1 \end{bmatrix}$, X = $\begin{bmatrix} x \\ y \\ z \end{bmatrix}$, B = $\begin{bmatrix} 4 \\ 0 \\ 2 \end{bmatrix}$ then 2x+y-z**

**A. 2**
**B. 1**
**C. 4**
**D. -2**

**Ans.** A

**Ques 4. The equation of the plane passing through the point (1, 1, 1) and perpendicular to the planes 2x + y - 2z = 5 and 3x - 6y - 2z =7 is?**

- **A. 14x + 2y - 15z = 1**
- **B. - 14x + 2y + 15z = 3**
- **C. 14x - 2y + 15z = 27**
- **D. 14x + 2y + 15z = 31**

**Ans.** D

**Ques 5. Using the rules in logic, write the negation of the following: (pq)^(qV~r)**

**Ans.** ~q Λ (~p V r)

**Ques 6. A student scores the following marks in five tests: 45, 54, 41, 57, 43. His score is not known for the sixth test. If the mean score is 48 in the six tests, then the standard deviation of the marks in six tests is:**

- **A. 100/3**
- **B. 10/3**
- **C. 10 / (sqrt(3))**
- **D. 100 / (sqrt(3))**

**Ans.** C

**Ques 7. A committee of 11 members is to be formed out of 8 males and 5 females. If m is the number of ways the committee is formed with at least 6 males and n is the number of ways with atleast 3 females, then**

- **A. n = m - 8**
- **B. m = n = 78**
- **C. m = n = 68**
- **D. m + n = 68**

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**Ans.** B

**Ques 8.** $\int \frac{\text{cosec } x}{\cos^2\left(1+\log\tan\frac{x}{2}\right)}dx$ is equal to

**A.** $\sin^2\left[1+\log\tan\frac{x}{2}\right]+C$

**B.** $\tan\left[1+\log\tan\frac{x}{2}\right]+C$

**C.** $-\tan\left[1+\log\tan\frac{x}{2}\right]+C$

**D.** $\sec^2\left[1+\log\tan\frac{x}{2}\right]+C$

**Ans.** B

**Ques 9. The value of √3 cosec20 - sec 20 is**

**Ans.** 4

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## Chemistry Questions

**Ques 1.** Which having highest first ionization energy

**Ques 2.** Half life of 1st Order reaction is 1 hr. then what is the fraction after 3hr

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**Ques 3.** Question related to Stephan Reaction

**Ques 4.** Question related to Max Oxidation No.

**Ques 5.** Question related to BCC structure find Radius

**Ques 6.** Question related to Depression in freezing Point

**Ques 7.** Question related to BP in decreasing order

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Physics Questions

**Ques 1.** Question related to $V_{RMS}$

**Ques 2.** Question related to Ideal Gas Equation

**Ques 3.** Question related to $C_P/C_V \rightarrow$ Monatomic Diatomic

**Ques 4.** Question related to Finding Amplitude

**Ques 5.** Question related to Finding overtone

**Ques 6.** Question related to Logic Gate

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