JEE Main 2023 Question Paper April 6 Shift 1 (Memory-Based)

JEE Main 2023 Chemistry Question Paper

Ques. Polymer which is named as orlon is:

A. Polyamide
B. Polyacrylonitrile
C. Polycarbonate
D. Polyethene

Answer. B

Ques. If the radius of ground state hydrogen is 51 pm, find out the radius of 5th orbit of Li^{2+} ions. (closest integer)

Ans. 425

Ques. Which of the following have square pyramidal structure?

A. $XeOF_4$
B. BrF_3
C. XeF_4
D. XeO_3

Ans. A

JEE Main 2023 Physics Question Paper

Ques. Kinetic energy of electron, proton and a particle is given as K, 2K and 4K respectively, then which of the following gives the correct order of De-Broglie wavelengths of electron, proton and a particle

A. $\Lambda_p > \Lambda_\alpha > \Lambda_e$
B. $\Lambda_\alpha > \Lambda_p > \Lambda_e$
C. $\Lambda_e > \Lambda_p > \Lambda_\alpha$
D. $\Lambda_e > \Lambda_\alpha > \Lambda_p$

Ans. C

Ques. A car is moving with a speed of 15 m/s towards a stationary wall. A person in the car pressed the horn and experienced the change in frequency of 40 Hz due to reflection from the stationary wall. Find the frequency of the horn. (Use v_{sound} = 330 m/s)

Ans. 420 Hz

Ques. If the height of the tower used for LOS communication is increased by 21%, the percentage change in range is?
   A. 5%
   B. 10%
   C. 15%
   D. 12%

Ans. B

Ques. A block of mass 100 gm is placed on a smooth surface, moves with acceleration of a = 2x, then the change in kinetic energy can be given as ($x^n/10$), find the value of n.

Ans. 2

Ques. Assertion (A) : Earth has atmosphere and moon doesn't
       Reason (R) : escape speed on moon is less than that of Earth.
   A. (A) and (R) are correct and (R) is the correct explanation of (A)
   B. (A) and (R) are correct and (R) is not the correct explanation of (A)
   C. (A) is true but (R) is false
   D. (A) and (R) both are false

Ans. A

Ques. If the length of a conductor is increased by 20 percent and cross-sectional area is decreased by 4 percent , then calculate the percentage change in the resistance of the conductor.
Ans. 25

JEE Main 2023 Mathematics Question Paper

Ques. If 5 f(x) + 4f (1/x) = 1/x + 3, then $18 \int_1^2 f(x)dx$ is:

    A. 10log 2 + 6

    B. 10log 2 - 6

    C. 5log 2 + 6

    D. 5log 2 - 6

Ans. B

Ques. Coefficient of x^{18} in $(x^4 - 1/x^3)^{15}$

Ans. 6

Ques. If the image of point P(1, 2, 3) about the plane 2x — y + 3z = 2 is Q, then the area of triangle PQR, where coordinates of R is (4, 10, 12)

    A. $\sqrt{1531} / 2$

    B. $\sqrt{1675} / 2$

    C. $\sqrt{2443} / 2$

    D. $\sqrt{1784} / 2$

Ans. A

Ques. Sum of first 20 terms

5, 11, 19, 29, 41

Ans. 3520

Ques. The sum of roots of $|x^2 - 8x + 15| - 2x + 7 = 0$ is:

    A. $11 + \sqrt{3}$

    B. $11 - \sqrt{3}$

    C. $9 + \sqrt{3}$

    D. $9 - \sqrt{3}$

Ans. C