JEE Main 2023 Answer Key

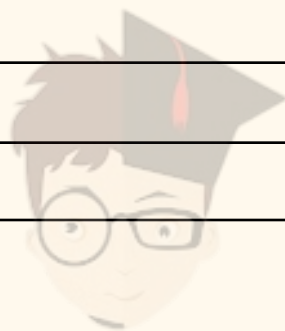**Date and Shift: April 11 Shift 2**   *Memory-Based Questions*

Physics Answer Key

Question No.	Answer Key
1	A
2	9
3	A
4	D
5	B
6	30
7	43
8	D
9	C
10	C

Chemistry Answer Key

Question No.	Answer Key
1	A
2	D
3	D
4	A
5	C
6	D
7	A
8	C
9	187
10	B

Mathematics Answer Key

Question No.	Answer Key
1	C
2	A
3	A
4	2
5	C
6	C
7	A
8	D
9	C
10	2187
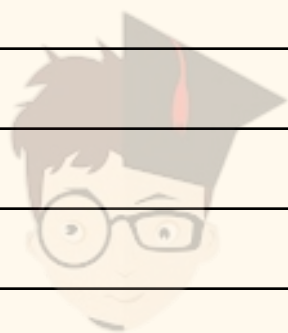
JEE Main 2023 Physics Question Paper

Question 1. Density (p) of a body depends on the force applied (F), its speed (v) and time of motion (t) by the relation p = $KF^a v^b t^c$, where K is a dimensionless constant. Then

   A. a = 1, b = -4 and c = -2
   B. a = 2, b = -4 and c = -1
   C. a = -1, b = -4 and c = 2
   D. a = 1, b = 4 and c = -2

Question 2. A body is rotating with kinetic energy E. If angular velocity of body is increased to three times of initial angular velocity then kinetic energy becomes nE. Find n.

Question 3. In which of the following process, the internal energy of gas remains constant

   A. Isothermal
   B. Isochoric
   C. Isobaric
   D. Adiabatic

Question 4. Potential at the surface of a uniformly charged non-conducting sphere is V. Then the potential at its centre is?

    A. 0
    B. V/2
    C. 2V
    D. 3V/2

Question 5. A particle is projected at an angle of 30° with ground with speed 40 m/s. The speed of the particle after 2 s is (use g = 10 ms^{-2})
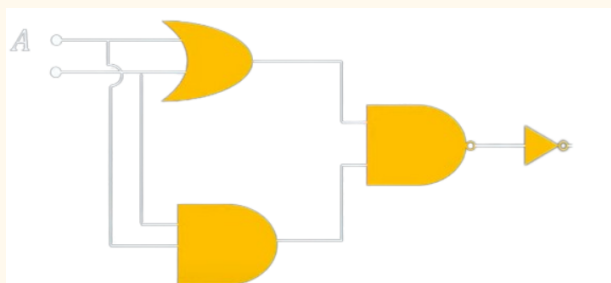
Question 6. Find power delivered by F at t = 10s . Body start from rest.
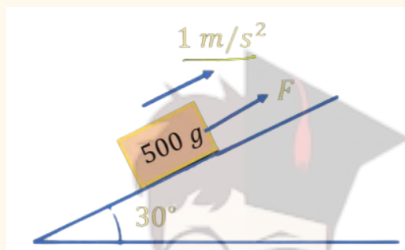
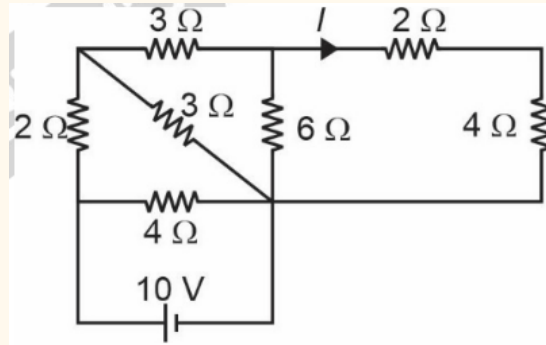**Question 7. Proton and electron have equal kinetic energy, the ratio of de-Broglie wavelength of proton and electron is 1/x. Find x. (Mass of proton 1849 times mass of electron)**

Question 8. The resultant gate is

A. NAND
B. NOR
C. OR
D. AND

Question 9. For the given circuit diagram, find the current I.

A. 5/16 A
B. 5/48 A
C. 5/12 A
D. 1/16 A

Question 10. A source of sound is moving away from a stationary observer with constant velocity 40 m/s. Find frequency heard by observer, if original frequency of source is 400 Hz and speed of sound in air is 360 m/s

A. 330 Hz
B. 320 Hz
C. 360 Hz
D. 280 Hz

JEE Main 2023 Chemistry Question Paper

Question 1. Red ppt. by Benedict solution is?

A. Glucose
B. RNA
C. DNA
D. Sucrose

Question 2. What is the chemical formula of freon gas?

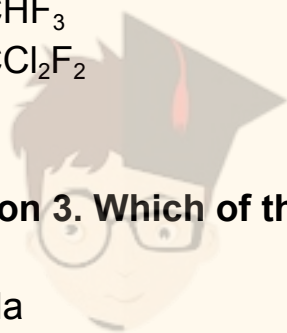A. $C_2Cl_2F_4$
B. $C_2F_2H_4$
C. CHF_3
D. CCl_2F_2

Question 3. Which of the following has minimum boiling point?

A. Na
B. K
C. Rb
D. Cs

Question 4. 2 gm of x is present in 1 mole of H_2O. Find the mass % of x.

A. 10%
B. 20%
C. 5%
D. 7%

Question 5. Statement-1: Sulphides are converted into oxide first.
Statement-2: Because oxides can be reduced easily.

    A. Only 1st is correct
    B. Only 2nd is correct
    C. Both are correct
    D. Both are incorrect

Question 6. Which of the following has maximum number of l.p. at central atom?

    A. ClO_3^-
    B. SF4
    C. XeF4
    D. I_3^-

Question 7. Glucose is added in 100 gm of water. Lowering in vapor pressure is 0.2 mm Hg. Vapour pressure of pure water is 54.2 mm Hg. Then the weight of glucose is?

    A. 3.70 gm
    B. 4.92 gm
    C. 6.73 gm
    D. 8.74 gm

Question 8. Least stable Hydride is?

    A. HF
    B. LiH
    C. BeH_2
    D. NaH

Question 9. When 2 gm magnesium reasts with excess of HCl and H_2 gas is produced then the volume of H_2 gas produced is ____ × 10^{-2} liter at STP? (Nearest Integer)

Question 10. Find the root mean square velocity for Nitrogen gas at 27ºC (in m/sec)

    A. 426
    B. 517
    C. 327
    D. 646

JEE Main 2023 Mathematics Question Paper

Question 1. Using all the letters of the word MATHS, then rank of the word THAMS is:

    A. 101
    B. 102
    C. 103
    D. 104

Question 2. $dy/dx + 5/x(1+x^5)y = (1+x^5)^2 / x^7$
If $y(1) = 2$, then the value of $y(2)$ is:

    A. 693/128
    B. 697/128

C. 637/128

D. 627/128

Question 3. Let mean and variance of the data 1,2,4,5,x,y are 5 and 10 Then mean deviation about the mean of data is?

A. 5/2

B. 7/2

C. 5/6

D. 7/6

Question 4. If $e^{8x} - e^{6x} - 3e^{4x} - e^{2x} + 1 = 0$, then number of solutions of above equation is?

Question 5. The area between the curve $y = 2x^2 + 1$ and tangent to it at (1, 3) and $x + y = 1$ is?

A. 1/15

B. 1/60

C. 4/15

D. 8/3

Question 6. If the ratio of three consecutive terms is 1:3:5 in the expansion of $(1 + x)^{n+2}$. Then sum of consecutive terms is?

A. 41

B. 64

C. 63

D. 43

Question 7. If a + b + c + d = 11 (a, b, c, d > 0) then maximum value of $a^5b^3c^2d = 3750\beta$ the β is?

    A. 90
    B. 115
    C. 120
    D. 85

Question 8. A circle with center at (2, 0) and maximum radius "r" is inscribed in the ellipse $x^2/36 + y^2/9 = 1$. The value of $12r^2$ is?

    A. 108
    B. 172
    C. 83
    D. 92

Question 9. $(4x/5 - 5/2x)^{2022}$ then $(1011)^{th}$ term from end is equal to (1024) times $(1011)^{th}$ term from starting then $|x|$ is?

    A. 16/7
    B. 16/5
    C. 5/16
    D. 8/5

Question 10. For a biased coin, the probability of getting head is ¼. It is tossed n times till we get head. Given a quadratic equation $64x^2 + 2nx + 1 = 0$. If the probability that the quadratic equation has no real roots is P/Q (where P and Q are coprime), then the value of Q – P is?