TEST SERIES – JEE /NEET

PART TEST -01 **TEST BOOKLET CODE: CS15 - PT-01**

Student Name: _____ **Roll No. : _____**

Time: 1 Hour **Maximum Marks: 92** **Date: _____**

Syllabus: Physics (Part Syllabus)

INSTRUCTIONS:

1. Immediately fill in the particulars on this page of the Test Booklet with Blue/Black Ball Point Pen. Use of pencil is strictly prohibited.
2. The test is of 1 hour duration.
3. The Test Booklet consists of 23 questions. The maximum marks are 92.
4. There are three parts in the question paper consisting of Part-A Physics (Q.no. 1 to 23). Each part is divided into two sections, **Section-I** consists of 20 multiple choice questions & **Section-II** consists of 3 Numerical value answer Questions.

Part	Section-I MCQ Type	Section-II Numeric Answer Type	Total
A-Physics	20	3	23
Total	**20**	**3**	**23**

5. There will be only one correct choice in the given four choices in Section-I. For each question 4 marks will be awarded for correct choice, 1 mark will be deducted for incorrect choice and zero mark will be awarded for unattempted question for both Section-I and II.
6. Use Blue/Black Ball Point Pen only for writing particulars/marking responses on Side-1 and Side-2 of the Answer Sheet. Use of pencil is strictly prohibited.
7. No candidate is allowed to carry any textual material, printed or written, bits of papers, pager, mobile phone, any electronic device, etc. except the Admit Card inside the examination hall/room.
8. Rough work is to be done on the space provided for this purpose in the Test Booklet only.
9. On completion of the test, the candidate must hand over the Answer Sheet to the Invigilator on duty in the Room/Hall. However, the candidates are allowed to take away this Test Booklet with them.
10. Do not fold or make any stray marks on the Answer Sheet.

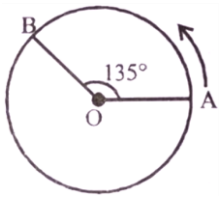
PART TEST 2026

PART-A: PHYSICS

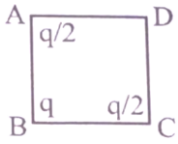
Section-I (Multiple Choice Questions)

1. A person moved from A to B on a circular path as shown in figure. If the distance travelled by him is 60 m, then the magnitude of displacement would be: (Given cos 135°=-0.7)

(a) 42 m (b) 47 m
(c) 19 m (d) 40m



2. The three charges q/2, q and q/2 are placed at the corners A, B and C of a square of side 'a' as shown in figure. The magnitude of electric field (E) at the corner D of the square, is :



(a) $\frac{q}{4\pi\in_0 a^2}\left(\frac{1}{\sqrt{2}}+\frac{1}{2}\right)$ (b) $\frac{q}{4\pi\in_0 a^2}\left(1+\frac{1}{\sqrt{2}}\right)$
(c) $\frac{q}{4\pi\in_0 a^2}\left(1-\frac{1}{\sqrt{2}}\right)$ (d) $\frac{q}{4\pi\in_0 a^2}\left(\frac{1}{\sqrt{2}}-\frac{1}{2}\right)$

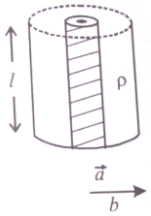
3. A wire of resistance R_1 is drawn out so that its length is increased by twice of its original length. The ratio of new resistance to original resistance is :

(a) 9:1 (b) 1:9
(c) 4:1 (d) 3:1

4. The dimensions of $\left(\frac{B^2}{\mu_0}\right)$ will be: (if μ_0 : permeability of free space and B: magnetic field)

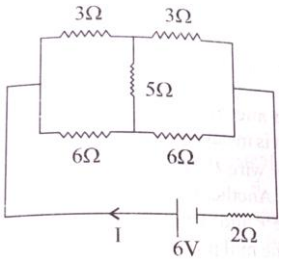
(a) $[M L^2T^{-2}]$ (b) $[M L T^{-2}]$
(c) $[M L^{-1} T^{-2}]$ (d) $[M L^2 T^{-2} A^{-1}]$

5. Model a torch battery of length ℓ to be made up of a thin cylindrical bar of radius 'a' and a concentric thin cylindrical shell of radius 'b' filled in between with an electrolyte of resistivity ρ (see figure). If the battery is connected to a resistance of value R, the maximum Joule heating in R will take place for:



(a) $R=\frac{\rho}{2\pi\ell}\left(\frac{b}{a}\right)$ (b) $R=\frac{\rho}{2\pi\ell}\ell n\left(\frac{b}{a}\right)$
(c) $R=\frac{\rho}{\pi\ell}\ell n\left(\frac{b}{a}\right)$ (d) $R=\frac{2\rho}{\pi\ell}\ell n\left(\frac{b}{a}\right)$

6. A battery of 6 V is connected to the circuit as shown below. The current I drawn from the battery is:



(a) 1A (b) 2A
(c) $\frac{6}{11}$A (d) $\frac{4}{3}$A

7. In Vander Waals equation $\left[P+\frac{a}{V^2}\right][V-b]=RT;P$ is pressure, V is volume, R is universal gas constant and T is temperature. The ratio of constants is $\frac{a}{b}$ dimensionally equal to

(a) $\frac{P}{V}$ (b) $\frac{V}{P}$
(c) PV (d) PV^3

8. Match List-I with List-II.

List –I		List-II	
(A)	Capacitance, C	(i)	$M^1L^1T^{-3}A^{-1}$
(B)	Permittivity of free space ε_0	(ii)	$M^{-1}L^{-3}T^4A^2$
(C)	Permeability of free space, μ_0	(iii)	$M^{-1}L^{-2}T^4A^2$
(D)	Electric field, E	(iv)	$M^1L^1T^{-2}A^{-2}$

Choose the correct answer from the options given below

(a) (A)-(iii), (B)-(ii), (C)-(iv), (D)-(i)

(b) (A)-(iii), (B)-(iv), (C)-(ii), (D)-(i)

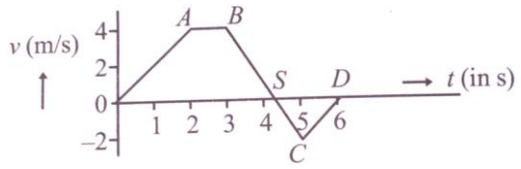
(c) (A)-(iv), (B)-(ii), (C)-(iii), (D)-(i)

(d) (A)-(iv), (B)-(iii), (C)-(ii), (D)-(i)

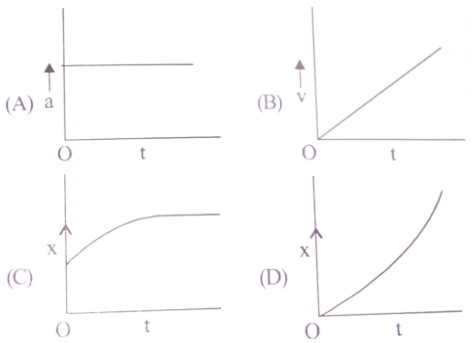
9. The velocity (v) and time (t) graph of a body in a straight line motion is shown in the figure. The point S is at 4.333 seconds. The total distance covered by the body in 6 s is:

(a) $\frac{37}{3}$m (b) 12 m

(c) 11 m (d) $\frac{49}{4}$m



10. A particle starts from origin O from rest and moves with a uniform acceleration along the positive x-axis. Identify all figures that correctly represents the motion qualitatively (a=acceleration, v=velocity, x=displacement, t=time)



(a) (B), (C) (b) (A)

(c) (A), (B), (C) (d) (A), (B), (D)

11. A ball is thrown up vertically with a certain velocity so that, it reaches a maximum height h. Find the ratio of the times in which it is at height $\frac{h}{3}$ while going up and coming down respectively.

(a) $\frac{\sqrt{2}-1}{\sqrt{2}+1}$ (b) $\frac{\sqrt{3}+\sqrt{2}}{\sqrt{3}-\sqrt{2}}$

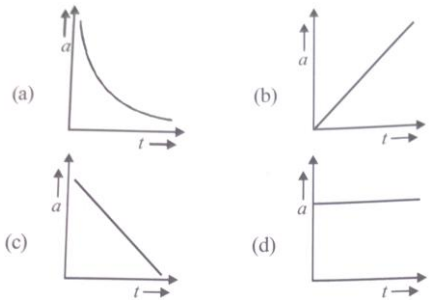
(c) $\frac{\sqrt{3}-1}{\sqrt{3}+1}$ (d) $\frac{1}{3}$

12. A ball is projected from the ground with a speed 15 ms^{-1} at an angle θ with horizontal so that its range and maximum height are equal, then tan θ will be equal to

(a) $\frac{1}{4}$ (b) $\frac{1}{2}$

(c) 2 (d) 4

13. The distance travelled by a body moving along a line in time t is proportional to t^3.
The acceleration-time (a, t) graph for the motion of the body will be



14. A charge of $4\mu C$ is to be divided into two. The distance between the two divided charges is constant. The magnitude of the divided charges so that the force between them is maximum, will be:

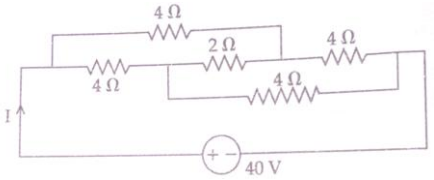
(a) $1\mu C$ and $3\mu C$ (b) $2\mu C$ and $2\mu C$

(c) 0 and $4\mu C$ (d) $1.5\mu C$ and $2.5\ \mu C$

15. **A.** The drift velocity of electrons decreases with the increase in the temperature of conductor.
B. The drift velocity is inversely proportional to the area of cross-section of given conductor.
C. The drift velocity does not depend on the applied potential difference to the conductor.

D. The drift velocity of electron is inversely proportional to the length of the conductor.
E. The drift velocity increases with the increase in the temperature of conductor.
Choose the correct answer from the options given below:
(a) A and B only (b) A and D only
(c) B and E only (d) B and C only

16. The current I in the given circuit will be:



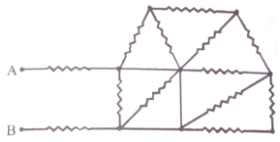
(a) 10 A (b) 20 A
(c) 4 A (d) 40A

17. Match List I with List II.

List I		List II	
A.	Torque	I.	Nms^{-1}
B.	Stress	II.	$J\ kg^{-1}$
C.	Latent Heat	III.	Nm
D.	Power	IV.	Nm^{-2}

Choose the correct answer from the options given below:
(a) A-III, B-II, C-I, D-IV (b) A-III, B-IV, C-II, D-I
(c) A-IV, B-I, C-III, D-II (d) A-II, B-III, C-I, D-IV

18. In the given circuit all resistances are of value R ohm each. The equivalent resistance between A and B is:



(a) 2R (b) $\frac{5R}{2}$
(c) $\frac{5R}{3}$ (d) 3R

19. Given below are two statements: One is labeled as **Assertion A** and the other is labeled as **Reason** R.
Assertion A: Alloys such as constantan & manganin are used in making standard resistance coils.
Reason R: Constantan and manganin have very small value of temperature coefficient of resistance.
In the light of the above statements, choose the correct answer from the options given below.
(a) Both A and R are true and R is the correct explanation of A.
(b) Both A and R are true but R is NOT the correct explanation of A.
(c) A is true but R is false.
(d) A is false but R is true.

20. A body of mass 10 kg is projected at an angle of 45^o with the horizontal. The trajectory of the body is observed to pass through a point (20, 10). If T is the time of flight, then its momentum vector, at time $t=\frac{T}{\sqrt{2}}$, is _____ [Take g=10 m/s^2]
(a) $100\hat{i}+\left(100\sqrt{2}-200\right)\hat{j}$ (b) $100\sqrt{2}\hat{i}+\left(100-200\sqrt{2}\right)\hat{j}$
(c) $100\hat{i}+\left(100-200\sqrt{2}\right)\hat{j}$ (d) $100\sqrt{2}\hat{i}+\left(100\sqrt{2}-200\right)\hat{j}$

Section-II (Numerical Value Questions)

21. If $\vec{A}=\left(2\hat{i}+3\hat{j}-\hat{k}\right)m$ and $\vec{B}=\left(\hat{i}+2\hat{j}+2\hat{k}\right)m$. The magnitude of component of vector $\vec{A}$ along vector $\vec{B}$ will be ____m

22. For the circuit shown, the value of current at time t=3.2 s will be _____A.

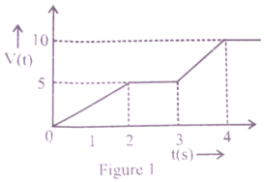


Figure 1

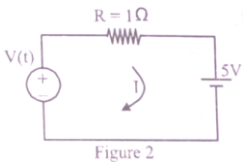
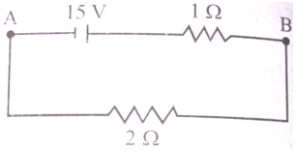


Figure 2

[Voltage distribution V(t) is shown by fig (1) and the circuit is shown in fig (2)]

23. For the network shown below, the value V_B-V_A is _____V.



SPACE FOR ROUGH WORK