

PREVIEW QUESTION BANK(Single)

Module Name : NCET Language: ENGLISH
 Section Name : 322-Physics
 Exam Date : 29-Apr-2025 Batch : 15:00-18:00

Sr. No.	Client Question ID	Question Body and Alternatives	Marks	Ne M
Section : 322-Physics				
Topic : Topic 115				
Q.Type : Objective Question				
1	6649	<p>In the process of charging, the mass of a negatively charged body :</p> <p>(1) increases (2) decreases (3) remains constant (4) is not related to the charging process</p> <p>(A) 1 (B) 2 (C) 3 (D) 4</p>	4.0	
Q.Type : Objective Question				
2	6650	<p>Choose the correct statements from the following :</p> <p>(A) The electric field lines are imaginary curves, but the field which they represent is real. (B) Gauss's theorem is valid for a closed surface of any shape and for any general charge distribution. (C) The net flux through a closed surface due to a charge lying outside the closed surface is zero. (D) The electric field of a uniformly charged infinite plane sheet, decreases with the increase in distance r from it.</p> <p>Choose the correct answer from the options given below :</p> <p>(1) (A), (B) and (C) only (2) (B), (C) and (D) only (3) (A), (C) and (D) only (4) (A), (B) and (D) only</p> <p>(A) 1 (B) 2 (C) 3 (D) 4</p>	4.0	
Q.Type : Objective Question				
3	6651		4.0	

A metal wire is bent in to a circle of radius 10 cm. It is given a charge of $200 \mu\text{C}$ which spreads on it uniformly. The electric potential at its centre is :

- (1) $6 \times 10^6 \text{ V}$
- (2) $12 \times 10^6 \text{ V}$
- (3) $15 \times 10^6 \text{ V}$
- (4) $18 \times 10^6 \text{ V}$

- (A) 1
- (B) 2
- (C) 3
- (D) 4

Q.Type : Objective Question

4 6652

An electron moves a distance of 6 cm when accelerated from rest by an electric field of strength $2 \times 10^4 \text{ NC}^{-1}$. The time for traveling, the distance is :

- (1) $5.85 \times 10^{-9} \text{ s}$
- (2) $8.27 \times 10^{-8} \text{ s}$
- (3) $12.12 \times 10^{-9} \text{ s}$
- (4) $16.8 \times 10^{-9} \text{ s}$

- (A) 1
- (B) 2
- (C) 3
- (D) 4

4.0

Q.Type : Objective Question

5 6653

Arrange the following materials in the increasing order of their resistivity at 0°C .

- (A) Aluminium
- (B) Silver
- (C) Copper
- (D) Iron
- (E) Tungsten

Choose the **correct** answer from the options given below :

- (1) (B), (C), (A), (D), (E)
- (2) (B), (D), (A), (E), (C)
- (3) (B), (C), (A), (E), (D)
- (4) (A), (B), (C), (E), (D)

- (A) 1
- (B) 2
- (C) 3
- (D) 4

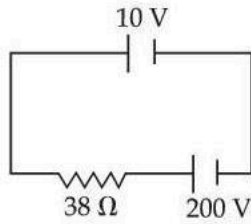
4.0

Q.Type : Objective Question

6 6654

4.0

A 10 V battery of negligible internal resistance is connected across a 200 V battery and resistance of 38Ω as shown. The value of current in the circuit is :



- (1) 2.5 A
- (2) 3.8 A
- (3) 5.0 A
- (4) 7.8 A

- (A) 1
- (B) 2
- (C) 3
- (D) 4

Q.Type : Objective Question

7 6655

A set of n identical resistors, each having of resistance $R \Omega$, when connected in series have an effective resistance $X \Omega$ and when the resistors are connected in parallel, their effective resistance is $Y \Omega$. The product of X and Y is :

- (1) R
- (2) R^2
- (3) $\frac{R^2}{2}$
- (4) $\frac{R}{n}$

- (A) 1
- (B) 2
- (C) 3
- (D) 4

Q.Type : Objective Question

8 6656

4.0

4.0

Match List - I with List - II.

List - I
(Place)

- (A) Interstellar space
- (B) On the earth's surface
- (C) Near a small bar magnet
- (D) On the surface of a neutron star

List - II

(Magnitude of Magnetic Field)

- (I) 10^8 T
- (II) 10^{-2} T
- (III) 10^{-12} T
- (IV) 10^{-5} T

Choose the **correct** answer from the options given below :

- (1) (A)-(I), (B)-(II), (C)-(IV), (D)-(III)
- (2) (A)-(III), (B)-(IV), (C)-(II), (D)-(I)
- (3) (A)-(III), (B)-(IV), (C)-(I), (D)-(II)
- (4) (A)-(IV), (B)-(III), (C)-(II), (D)-(I)

(A) 1

(B) 2

(C) 3

(D) 4

Q.Type : Objective Question

9 6657

Arrange the following substances in the increasing order of their magnetic susceptibility at room temperature :

- (A) Calcium
- (B) Lithium
- (C) Aluminium
- (D) Niobium
- (E) Chromium

Choose the **correct** answer from the options given below :

- (1) (E), (C), (B), (A), (D)
- (2) (A), (B), (E), (D), (C)
- (3) (A), (B), (C), (E), (D)
- (4) (A), (B), (C), (D), (E)

(A) 1

(B) 2

(C) 3

(D) 4

4.0

Q.Type : Objective Question

10 6658

A solenoid of length 0.5 m has radius of 1 cm and has 500 turns. It carries a current of 5 A. The magnitude of the magnetic field inside the solenoid is :

- (1) 1.69×10^{-3} T
- (2) 4.8×10^{-3} T
- (3) 6.28×10^{-3} T
- (4) 6.28×10^{-4} T

(A) 1

(B) 2

4.0

(C) 3

(D) 4

Q.Type : Objective Question

11 6659

A 5 MeV proton is falling vertically downward through a region of magnetic field 1.5 T acting horizontally from south to north. The (magnitude of) magnetic force exerted on the proton is :

(Given the mass of a proton is 1.6×10^{-27} kg)

- (1) 3.79×10^{-12} N
- (2) 7.58×10^{-12} N
- (3) 8.42×10^{-12} N
- (4) 9.6×10^{-11} N

(A) 1

(B) 2

(C) 3

(D) 4

4.0

Q.Type : Objective Question

12 6660

The induction coil works on the principle of :

- (1) Self-induction
- (2) Mutual induction
- (3) Ampere's rule
- (4) Fleming's right hand rule

(A) 1

(B) 2

(C) 3

(D) 4

4.0

Q.Type : Objective Question

13 6661

Choose the correct statements from the following :

- (A) The magnetic flux is maximum when surface is held perpendicular to the direction of the magnetic field.
- (B) No emf is induced when a coil and a magnet move with the same velocity in the same direction.
- (C) An emf is induced when a closed loop moves totally inside a uniform magnetic field.
- (D) A vertical metallic pole falls down through the plane of the magnetic meridian. An emf is induced between its end.

Choose the **correct** answer from the options given below :

- (1) (A) and (B) only
- (2) (B) and (C) only
- (3) (C) and (D) only
- (4) (A) and (D) only

(A) 1

4.0

(B) 2

(C) 3

(D) 4

Q.Type : Objective Question

14 6662

If both number of turns and core length of an inductor are doubled keeping other function constant, self inductance will be :

- (1) halved
- (2) doubled
- (3) quadrupled
- (4) unaffected

(A) 1

(B) 2

(C) 3

(D) 4

4.0

Q.Type : Objective Question

15 6663

A radio wave of wavelength 300 m can be transmitted using condensor of capacity $2.4 \mu\text{F}$, if inductance of the required coil for resonance is :

- (1) $1.055 \times 10^{-6} \text{H}$
- (2) $11.055 \times 10^{-6} \text{H}$
- (3) $2.110 \times 10^{-6} \text{H}$
- (4) $12.110 \times 10^6 \text{H}$

(A) 1

(B) 2

(C) 3

(D) 4

4.0

Q.Type : Objective Question

16 6664

Match List - I with List - II.

List - I

Frequency band

- (A) 540-1600 kHz
- (B) 3-30 MHz
- (C) 88-108 MHz
- (D) 840-935 MHz

List - II

Used in service

- (I) FM broadcast
- (II) Cellular Mobile radio
- (III) Medium wave AM band
- (IV) Shortwave AM band

Choose the **correct** answer from the options given below :

- (1) (A)-(IV), (B)-(III), (C)-(II), (D)-(I)
- (2) (A)-(IV), (B)-(III), (C)-(I), (D)-(II)
- (3) (A)-(III), (B)-(IV), (C)-(I), (D)-(II)
- (4) (A)-(III), (B)-(IV), (C)-(II), (D)-(I)

(A) 1

4.0

(B) 2

(C) 3

(D) 4

Q.Type : Objective Question

17 6665

Light with an energy flux of 18 W/cm^2 falls normally on a non-reflecting surface having an area of 20 cm^2 . The average force exerted on the surface during a 30 min time span is :

- (1) $1.2 \times 10^{-6} \text{ N}$
- (2) $2.1 \times 10^{-6} \text{ N}$
- (3) $2.8 \times 10^{-6} \text{ N}$
- (4) $3.6 \times 10^{-6} \text{ N}$

(A) 1

(B) 2

(C) 3

(D) 4

4.0

Q.Type : Objective Question

18 6666

Match List - I with List - II.

List - I

Source

- (A) Light diverging from a point source
- (B) Light emerging from a narrow rectangular slit
- (C) Plane wavefront incident on a convex lens
- (D) Plane wavefront incident on a concave lens

List - II

Shape of Wavefront

- (I) Diverging spherical wavefront emerges
- (II) Cylindrical wavefront emerges
- (III) Spherical wavefront emerges
- (IV) Converging spherical wavefront emerges

Choose the **correct** answer from the options given below :

- (1) (A)-(I), (B)-(II), (C)-(III), (D)-(IV)
- (2) (A)-(II), (B)-(III), (C)-(I), (D)-(IV)
- (3) (A)-(III), (B)-(II), (C)-(IV), (D)-(I)
- (4) (A)-(III), (B)-(II), (C)-(I), (D)-(IV)

(A) 1

(B) 2

(C) 3

(D) 4

4.0

Q.Type : Objective Question

19 6667

4.0

Choose the correct statements from the following :

- (A) A concave mirror is preferred to a plane mirror for the purpose of shaving.
- (B) The absolute refractive index of a medium can be less than unity.
- (C) When light passes from a rarer medium to a denser medium both its frequency and wavelength change.
- (D) Snells law of refraction fails when light is incident normally on the surface of a refracting medium.

Choose the **correct** answer from the options given below :

- (1) (A) and (B) only
- (2) (B) and (C) only
- (3) (C) and (D) only
- (4) (A) and (D) only

(A) 1

(B) 2

(C) 3

(D) 4

Q.Type : Objective Question

20 6668

A thin lens of glass ($\mu = 1.5$) of focal length 10 cm is immersed in water ($\mu = 1.33$). The new focal length of the lens is :

- (1) 20 cm
- (2) 39 cm
- (3) 48 cm
- (4) 54 cm

(A) 1

(B) 2

(C) 3

(D) 4

4.0

Q.Type : Objective Question

21 6669

In Young's double slit experiment, the slits are 0.2 mm apart and the screen is 1.5 m away. It is observed that the distance between the central bright fringe and 4th dark fringe is 1.8 cm. The wavelength of light used is nearly :

- (1) 4138 Å
- (2) 3428 Å
- (3) 6857 Å
- (4) 7105 Å

(A) 1

(B) 2

(C) 3

(D) 4

4.0

Q.Type : Objective Question

22	6670	<p>Arrange the following metals in the increasing order of their work function.</p> <p>(A) Al (B) Ag (C) Pt (D) Cs (E) Ca</p> <p>Choose the correct answer from the options given below :</p> <p>(1) (A), (B), (C), (D), (E) (2) (E), (D), (C), (B), (A) (3) (D), (E), (A), (C), (B) (4) (D), (E), (A), (B), (C)</p> <p>(A) 1 (B) 2 (C) 3 (D) 4</p>	4.0
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Q.Type : Objective Question

23	6671	<p>A monochromatic source, emitting light of 600 nm, has a power output of 66 W. The number of photons emitted by this source in 2 min is :</p> <p>(Given $h = 6.6 \times 10^{-34}$ J-s)</p> <p>(1) 1.2×10^{21} (2) 1.8×10^{22} (3) 2.4×10^{22} (4) 6.0×10^{22}</p> <p>(A) 1 (B) 2 (C) 3 (D) 4</p>	4.0
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Q.Type : Objective Question

24	6672	<p>Activity of a radioactive sample decreases to $\left(\frac{1}{3}\right)^{\text{rd}}$ of its original value in 3 days. Then in 9 days its activity will become :</p> <p>(1) $\frac{1}{27}$ of the original value (2) $\frac{1}{18}$ of the original value (3) $\frac{1}{9}$ of the original value (4) $\frac{1}{3}$ of the original value</p> <p>(A) 1</p>	4.0
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(B) 2

(C) 3

(D) 4

Q.Type : Objective Question

25 6673

Ionisation energy of He^+ ion in its first excited state is :

- (1) 6.8 eV
- (2) 13.6 eV
- (3) 20.4 eV
- (4) 27.2 eV

(A) 1

(B) 2

(C) 3

(D) 4

4.0

Q.Type : Objective Question

26 6674

An alpha particle of energy $\frac{1}{2}mv^2$ bombards a heavy target of charge Ze . Then, the distance of closest approach for the alpha particle is proportional to :

- (1) v^2
- (2) $\frac{1}{m}$
- (3) $\frac{1}{v^4}$
- (4) $\frac{1}{Ze}$

(A) 1

(B) 2

(C) 3

(D) 4

4.0

Q.Type : Objective Question

27 6675

At absolute zero temperature, a semiconductor acts as a/an :

- (1) dielectric
- (2) conductor
- (3) insulator
- (4) super conductor

(A) 1

(B) 2

(C) 3

4.0

(D) 4

Q.Type : Objective Question

28 6676

4.0

The input resistance of a transistor is 1000Ω . On changing its base current by $10 \mu\text{A}$, the collector current increases by 2 mA . A load resistance of $5 \text{ k}\Omega$ is used in the circuit. The voltage gain is :

- (1) 200
- (2) 400
- (3) 800
- (4) 1000

(A) 1

(B) 2

(C) 3

(D) 4