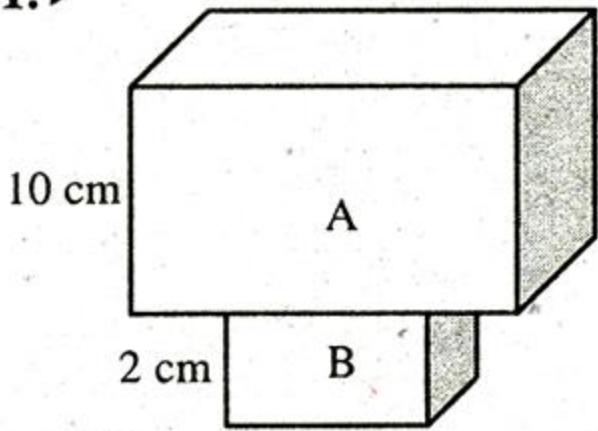## Model Question of SSC Examination 2016
Sub: Physics (Creative)

Time: 2 Hours   Total Marks-40
(Answer any four of the following Questions)

1. ▶

The body having 50 Kg mass two different cubic shaped Part 'A' and 'B' as shown in the figure

a. What is called Bisomass?   1
b. Why doesn't man get sunk into water of Dead sea? Explain.   2
c. What will be the pressure on the bottom surface of 'B'?   3
d. What will happen, if the body 'A' immerged into the liquid of density 123 Kgm^{-3}? Give your opinion with hathematical analysis.   4

**2.** ▶
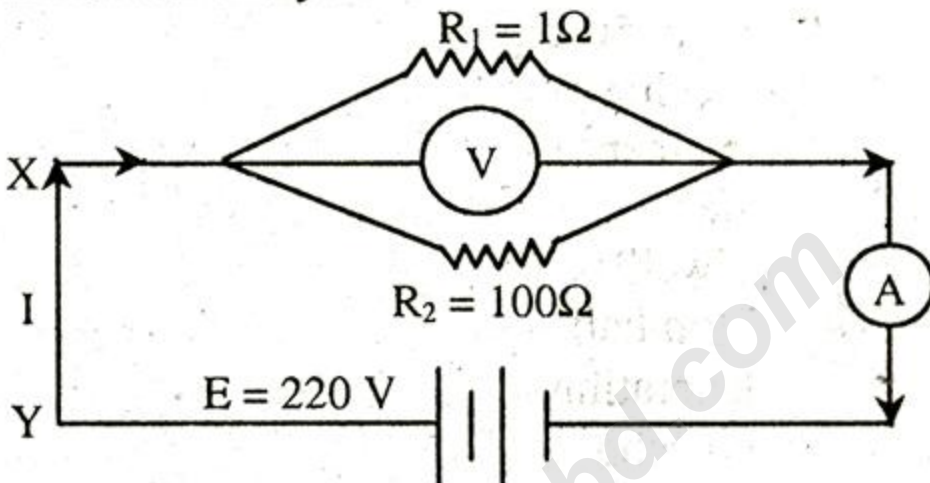
a. What is called conductivity of a conductor?   1
b. If the potential difference between two ends of a conductor is made, how will the electric current flowing through it be changed?   2
c. Find out the reading in Ammeter from the above circuit.   3
d. If $R_3 = 20\Omega$ is connected between 'X' and 'Y' in above circuit, what will be the change of the reading in Voltmeter? Give your opinion with mathematical analysis. 4

3. ▶
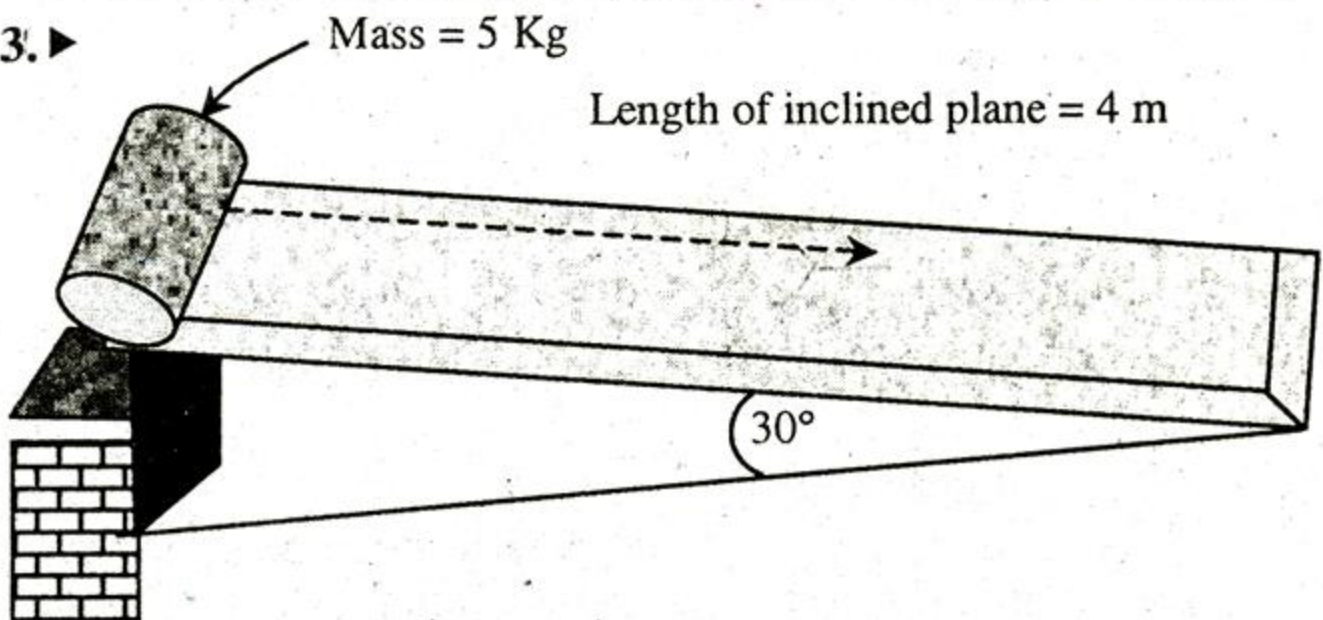
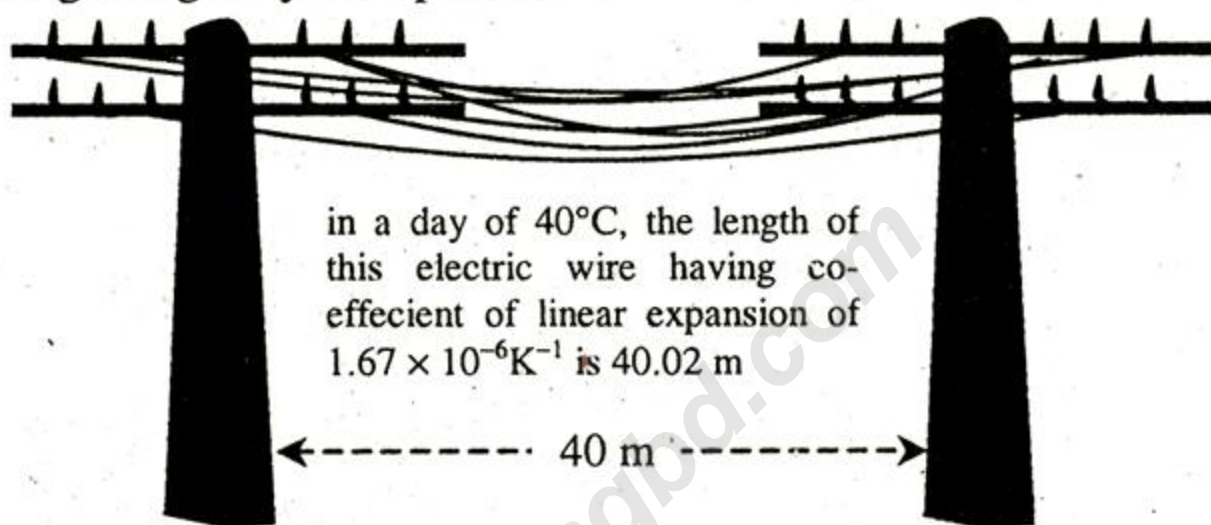a. What is called solar energy?   1
b. What does the solar cell mean? Explain.   2
c. Find the potential energy of the body at that point in stem. 3
d. Where on the inclined plane the kinetic energy of the body is twice of its potential energy? Give your opinion with mathematical analysis.   4

4. ▶
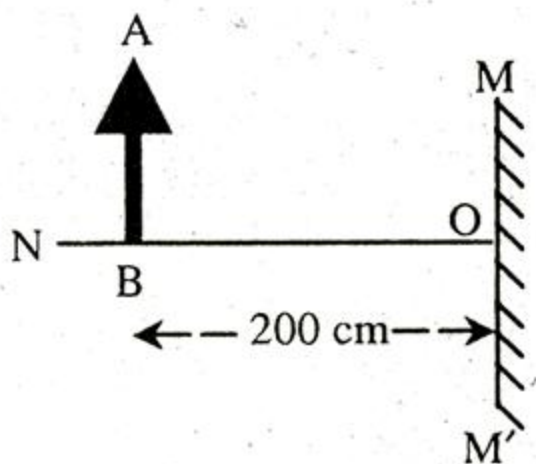
a. What is called diffused diffused reflection? 1

b. When will a parallel beam of light be parallel after reflection? Explain. 2

c. Explain the nature of the image of 'AB' object according to the above figure. 3

d. If the MOM′ mirror is replaced by a concave mirror of focal length 1 m, then what will be the change of the nature of the image of 'AB' object in above stem? By drawing ray diagram give your opinion. 4

5. ▶

in a day of 40°C, the length of this electric wire having co-effecient of linear expansion of $1.67 \times 10^{-6} K^{-1}$ is 40.02 m

←------- 40 m ------→

a. What is called evaporation? 1

b. When is the heat capacity of a definite substance increased? Explain. 2

c. Find out the temperature of that day in stem in Fahrenheit scale. 3

d. If the temperature in another day is decrased up to 10°C, then what will happen on electric wire in stem? Give your opinion with mathematical analysis. 4
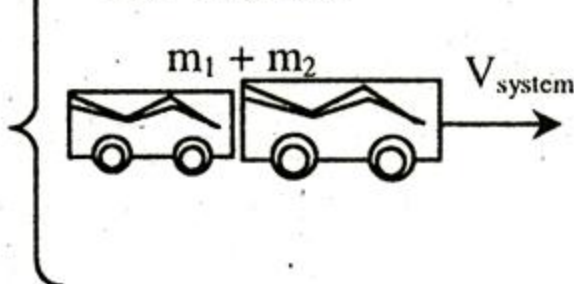
6. ▶ <u>Collision exists in</u>
<u>One second.</u>

before collision

after collision

$V = 10$ m/s $V = 0$m/s

$m_1 + m_2$

V_{system}

$m_1=50$ m/s

$m_2=80$ m/s
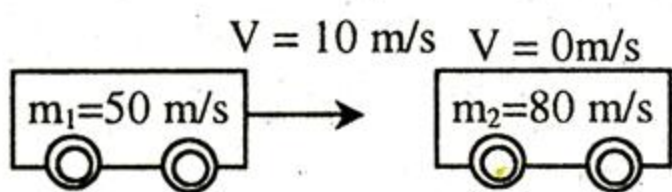
a. What is called frictional force? 1

b. What do you mean by unbalanced force? Explain. 2

c. Find out the final velocity after collision according to above stem. 3

d. In which condition of m_2, after collision m_1 will be back to the opposite direction with the same velocity? Give your opinion with mathematical analysis. 4

Subject Code : | 1 | 3 | 6

Model Question of SSC Examination 2016
Sub: Physics (MCQ)
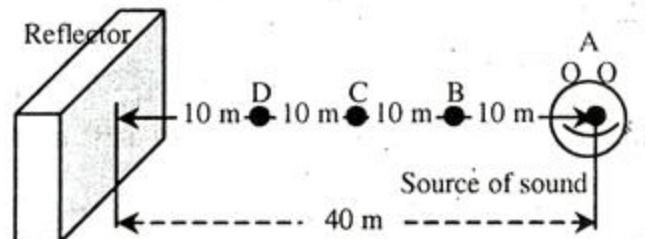
Time: 35 minutes   Total Marks- 35

[Darken the circle (O) of the correct option from the following alternatives]

1. Who gave the idea that the matter consists of indivisible units?
   - (a) Plato
   - (b) Democrats
   - (c) Aristotle
   - (d) Galileo

2. Which one is scalar quantity?
   - (a) Work
   - (b) Velocity
   - (c) Weight
   - (d) Force

3. Which two quantities have same unit and dimension?
   - (a) Energy and work
   - (b) Mass and weight
   - (c) Acceleration and velocity
   - (d) Displacement and velocity

4. How much meter is equal to 10 femto meter?
   - (a) 10^{-15}m
   - (b) 10^{-14}m
   - (c) 10^{-13}m
   - (d) 10^{-12}m

5. The motion of the hands of clock is–
   i. Circular
   ii. Periodic
   iii. Vibratory
   Which one of the following is correct?
   - (a) i & ii
   - (b) i & iii
   - (c) ii & iii
   - (d) i, ii & iii

6. A car starts to move with initial velocity of 5ms^{-1} and after 10s becomes 45ms^{-1}. What is the displacement of the car during this time?
   - (a) 100 m
   - (b) 200 m
   - (c) 400 m
   - (d) 250 m

Answer questions (7 & 8) according to the following chart for a moving car with 10 ms^{-1} initial velocity.

Time interval, t (s)	0-5	6-10	11-15	16-20
Acceleration, a (ms^{-2})	0	3	2	−1

7. What is the value of velocity after 10 sec?
   - (a) 10 ms^{-1}
   - (b) 20 ms^{-1}
   - (c) 25ms^{-1}
   - (d) 30ms^{-1}

8. At which time interval is the displacement of the car maximum?
   - (a) 0-5 sec
   - (b) 6-10 sec
   - (c) 11-15 sec
   - (d) 16-20 sec

9. Which is the dimension of pressure?
   - (a) [MLT^{-1}]
   - (b) [MLT^{-2}]
   - (c) [ML^{-1}T^{-2}]
   - (d) [ML^{-3}]

10. "Within elastic limit stress is directly proportional to strain." Whose law is this?
    - (a) Pascal's law
    - (b) Archimedes's law
    - (c) Hook's law
    - (d) Newton's law

11. Power =
    i. Force × velocity
    ii. Work ÷ time
    iii. mass × g × height ÷ time
    Which one of the following is correct?
    - (a) ii
    - (b) iii
    - (c) ii & iii
    - (d) i, ii & iii

12. A car starting from rest in straight moves with uniform acceleration of 10ms^{-2}? What will be the value of velocity while crossing a person at a distance 80 m?
    - (a) 10 ms^{-1}
    - (b) 20 ms^{-1}
    - (c) 30 ms^{-1}
    - (d) 40 ms^{-1}

13. Which type of frictional force does a sky-diver confront during falling towards the earth?
    - (a) Static friction
    - (b) Sliding friction
    - (c) Rolling friction
    - (d) Fluid friction

Answer questions (14 & 15) according to the following figure:

Temperature of air medium is 35°C

14. What is the velocity of sound in air in above stem?
    - (a) 332 ms^{-1}
    - (b) 343 ms^{-1}
    - (c) 350ms^{-1}
    - (d) 353 ms^{-1}

15. From which point nearer to reflector echo can be heard?
    - (a) A
    - (b) B
    - (c) C
    - (d) D

16. What is the potential energy of a body of mass 5 kg to raise it to height of 30 m above the surface of the earth? g = 9.8ms^{-2}
    - (a) 1550 J
    - (b) 1570 J
    - (c) 1479 J
    - (d) 1470 J

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17. How many telephone signals can be transmitted at a time through a single optical fiber?
    (a) 100   (b) 200
    (c) 2000   (d) 10000

18. Which one is correct equation?
    (a) $N = f\lambda$ (b) $v = \dfrac{\lambda}{T}$
    (c) $V = \dfrac{f}{\lambda}$ (d) $f\lambda = 1$

19. Which is the density of ice?
    (a) 920 kgm^{-3} (b) 1000 kgm^{-3}
    (c) 7800 kgm^{-3} (d) $19,300 \text{ kgm}^{-3}$

20. Evaporation depends on–
    i. Nature of the liquid
   ii. Pressure on liquid
    iii. Flow of air
    Which one of the following is correct?
    (a) i   (b) i & iii
    (c) ii & iii   (d) i ,ii &iii

21. Echo is heard after 1.5 seconds of its production at the place of middle between the source of sound and the reflector. If the velocity of sound of air 340 ms^{-1}, What is the distance between the source of sound and the reflector?
    (a) 17 m   (b) 34 m
    (c) 255 m   (d) 340 m

Answer questions (22 & 23) according to the figure below:
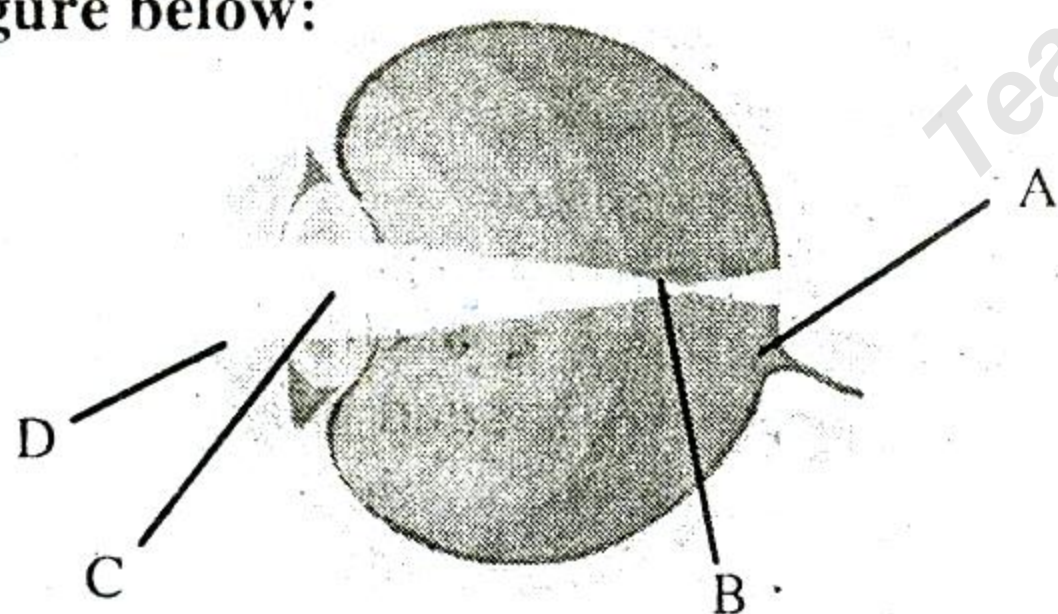
22. Which part in above figure contains the nerve-fivers?
    (a) A   (b) B
    (c) C   (d) D.

23. The defect of eye shown in the figure is–
    i. Called hypermetropia
    ii. Remedied by concave lens
    iii. Caused due to increase of the power of eye lens.
    Which one of the following is correct?
    (a) i   (b) i & iii
    (c) ii & iii   (d) i ,ii & iii

24. What is the value of Specific heat to water vapor?
    (a) $400 \text{ Jkg}^{-1}\text{k}^{-1}$ (b) $2000 \text{ Jkg}^{-1}\text{k}^{-1}$
    (c) $2100 \text{ Jkg}^{-1}\text{k}^{-1}$ (d) $4200 \text{ Jkg}^{-1}\text{k}^{-1}$

25. If electrons are flowing from 'X' end to 'Y'-end through a conductor, then which one is below is true?
    (a) $V_x < V_y$ (b) $I_x < I_y$
    (c) $V_x \cdot V_y$ (d) $V_x = V_y$

26. Which one in below is a nonconductor substance?
    (a) Glass   (b) Copper
    (c) Soil   (d) Human body

27. If there resistances 5Ω, 12Ω and 3Ω are connected is series, then what will be the equivalent resistance?
    (a) $10\ \Omega$ (b) $20\ \Omega$
    (c) $30\ \Omega$ (d) $40\ \Omega$

28. Which one is correct equation to calculate the spent electrial energy?
    (a) $W = VRt$ (b) $W = IR^2t$
    (c) $W = I^2Rt$ (d) $W = V^2Rt$

29. In a transformer, the voltage of primary coil is 10 v and current 6 A. If the voltage of secondary coil is 20 V; calculate the current of secondary coil?
    (a) 3 A   (b) 4 A
    (c) 5 A   (d) 6 A

30. What is called the rectangular coil of wire on the soft sheet of iron in generator?
    (a) Slip ring   (b) Armature
    (c) Armature   (d) Solenoid

31. What is the unit of radioactivity?
    (a) Becquerel   (b) Curie
    (c) eV   (d) Watt

32. What is the charge of an alpha particle?
    (a) $1.6 \times 10^{-19}\text{C}$ (b) $3.2 \times 10^{-19}\text{C}$
    (c) $4.8 \times 10^{-19}\text{C}$ (d) $6.4 \times 10^{-19}\text{C}$

33. Which converts sound energy into electrical energy?
    (a) Semiconductor   (b) Radio
    (c) Speaker   (d) Microphone

34. In what form a transistor is used in an electronic instrument?
    (a) Rectifier   (b) Amplifier
    (c) Detector   (d) Modulator

35. In which diagnosis process is the Tomography used?
    (a) ECG   (b) MRI
    (c) CT scan   (d) Angiography

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1 (b)	2 (a)	3 (a)	4 (b)	5 (a)	6 (d)	7 (c)	8 (d)	9 (c)	10 (c)	11 (d)	12 (d)	13 (d)	14 (d)	15 (c)	16 (d)	17 (c)	18 (b)	19 (a)	20 (d)
21 (d)	22 (a)	23 (c)	24 (b)	25 (a)	26 (a)	27 (b)	28 (c)	29 (a)	30 (c)	31 (a)	32 (b)	33 (d)	34 (b)	35 (c)					