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JSTSE : PREVIOUS YEARS

(PHYSICS 2013)

1. What is the correct ascending order for frequencies of the following radiations?

(1) Visible (2) X-rays

(3) Ultra-violet (4) Radio waves

(a) 1,3,2.4 (b) 3,2.4,1

(c) 4.1,3.2 (d) 4.31,2

Ans. (c)

2. In an atomic explosion, enormous energy is released which is due to the:

(1) Conversion of neutrons into protons

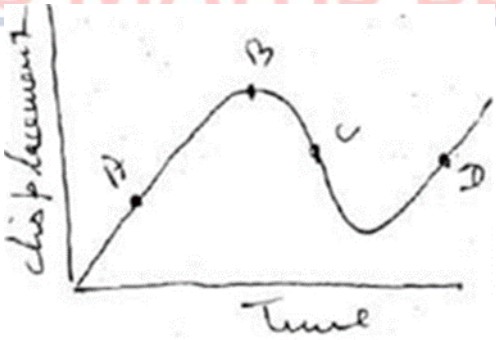
(2) Conversion of chemical energy into heat energy

(3) Conversion of mechanical energy into Nuclear energy

(4) Conversion of mass into energy

Ans. (4)

3. The displacement-time graph of a moving particle is shown below:



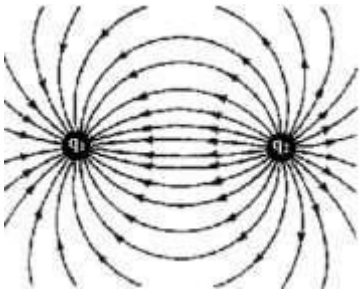
The instantaneous velocity of the particle is negative at the point?

(1) A (2) B

(3) C (4) D

Ans. (3)

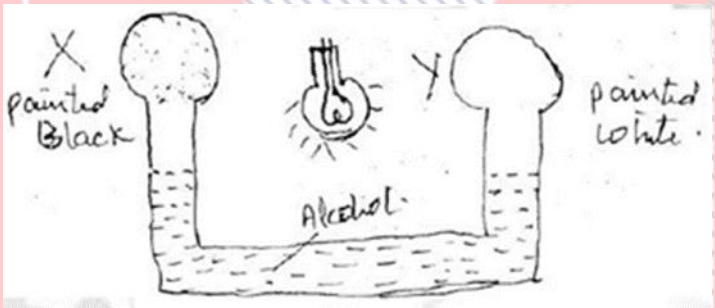
4. The figure given below is a plot of lines of force due to two Charges q_1 and q_2 Figure out the Sign of the two. Charges:



(1) both positive
(2) both negative
(3) q_1 positive and q_2 negative
(4) q_1 negative and q_2 positive

Ans. (4)

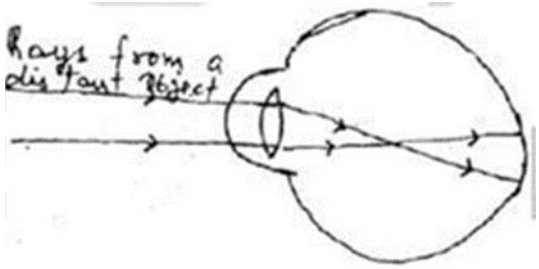
5. Two bulbs X and Y painted black and white respectively are filled with air and connected by a U tube partly filled with alcohol. What happens to levels of alcohol in the limbs X and Y. When an electric bulb placed mid way between the bulbs is lighted



(1) The level of alcohol falls in both the limbs
(2) The level of alcohol in limb X rises while that in limb Y falls
(3) The level of alcohol in limb X falls while that in Y rises
(4) There is no change m the levels of alcohol m the two limbs

Ans. (2)

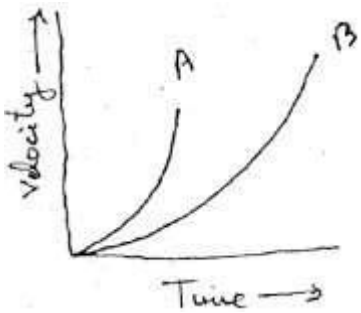
6. A person is suffering from some sight problem. From the given diagram say which defect he suffers from?



(1) Myopia
(2) Hyper metropia
(3) Cataract
(4) Astig matism

Ans. (1)

7. V-F graph of two vehicles A and B starting at the same time from rest is given as under. Which of the following statements can be deduced from the graph as correct ?



(1) Velocity of B is higher than that of A.

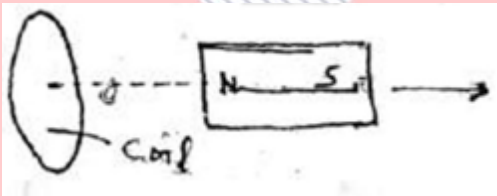
(2) Acceleration of A is higher than that of B.

(3) Acceleration of B is higher than that of A.

(4) Acceleration of A is increasing at a slower rate than that of B.

Ans. (2)

8. A magnet NS is placed along the axis of a circular Coil. The magnet is moved away from the Coil. The induced current 111 the coil is:

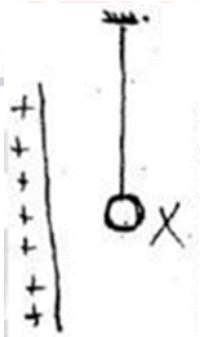


(1) Zero (2) Clockwise

(3) Anti-clockwise (4) None of these

Ans. (2)

9. The uncharged Metallic Sphere X suspended as shown in figure. The Metallic sphere is given a push so that it moves towards the +ve plate. Which of the following statement is correct?



(1) X touches the +ve plate and remains in Contact with it.

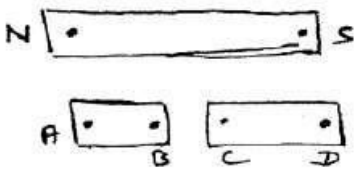
(2) X touches +ve plate and then moves towards negative plate and remains in contact with it.

(3) X moves to and fro between the two plates with a constant time period.

(4) X moves to and fro between the two plates with an increasing time period.

Ans. (1)

10. If a bar magnet accidently breaks up into two Parts . The polarity of ends A. B. C & D will be:



(1) A, B North poles, C, D South poles

(2) A, C North poles. B. D South poles

(3) A, B, C North poles. D South poles

(4) A North pole. D South pole. Polarity of B and C cannot be determined:

11. The device used to convert AC. into DC. is:

(1) Ammeter (2) Galvanometer

(3) Rectifier (4) Transformer

12. In the visible spectrum, the colour having shortest wavelength is:

(1) Red (2) Yellow

(3) Blue (4) Violet

13. The most intense man-made light source is:

(1) Laser (2) LED

(3) Maser (4) Mercury Vapour Lamp

Ans. (4)

14. The bill of Electric consumption is based 011 the measurement of:

(1) current (2) voltage

(3) wattage (4) none of these

Ans. (3)

15. When a bucket full of water is drowned in water, its weight becomes less than before due to:

(1) Density of water (2) Buoyancy force

(3) Pressure of water (4) Surface tension of water

Ans. (2)

16. Which of the following cannot be accelerated in a cyclotron

(1) Proton (2) α-particle

(3) Electron (4) Neutron

Ans. (4)

17. A material that allows partial transmission of incident light is called

(1) Semi-permeable (2) Transducer

(3) Transparent (4) Translucent

18. Due to which of the following a shaving blade when placed gently on water floats ?

(1) Surface Tension (2) Viscosity

(3) Law of floatation (4) Archimedes Principle

19. The stars twinkle in the night, because.

(1) Their emit light intermittently

(2) The star's atmosphere absorbs light intermittently

(3) The. earth's atmosphere absorbs light intermittently

(4) The refractive index of air in atmosphere fluctuates

Ans. (4)

20. The velocity of particle moving with a uniform speed changes with time according to the relation V = 2 3t+l $4t^2$. then v-t graph of the particle is a

(1) straightline parallel to x axis (2) a straightline parallel to y axis

(3) a parabola (4) a circle

21. Small liquid drops are spherical in shape because:

(1) of adhesion

(2) of gravitational force

(3) of the atmospheric pressure from all sides of the drop

(4) the liquid drops tend to have minimum surface area due to surface tension

Ans. (4)

22. When the same note is played on a sitar and a flute. The sound produced can be distinguished from each other because of the difference in:

(1) Pitch. Loudness and quality (2) Pitch and Loudness

(3) Quality only (4) Loudness only

Ans. (3)

23. Distribution of electric power from one place to another is done of high A.C. (Alternating Current) Voltage, because:

(1) Wastage of electricity is minimised

(2) The distribution of power is economical

(3) Stealing of electric wires is prevented

(4) It is safe to handle

Ans. (1)

24. When an object is placed between two mirrors placed inclined to each other at an angle of 45°, No. of images formed are:
(1) 3 (2) 5
(3) 7 (4) None of these

25. Speed of sound is greater in solids than in liquids. Because :
(1) The atoms in solids are regularly arranged
(2) The atoms in liquids are loosely packed
(3) The solids have high elasticity
(4) None of these

26. A piece of paper and a cricket ball and dropped simultaneously from the same height. They will strike the ground simultaneously, if they
(1) have the same volume (2) have the same mass
(3) have the same density (4) are in vaccum

27. The speed of light will be minimum while passing through:
(1) Glass (2) Air
(3) Water (4) Vaccum

28. A Red object when seen through a thick blue glass appears:
(1) Green (2) Voilet
(3) Black (4) Red

Ans. (3)

29. Electromagnetic Induction is used in:
(1) Galvanometer (2) Thermo couple
(3) Generators (4) Voltmeter

Ans. (3)

30. The law of conservation of Energy states that:
(1) Energy can be created as well as destorved
(2) Energy can be created but not destroyed
(3) Energy cannot be created but can be destroyed
(4) Energy can neither be created nor destroyed

Ans. (4)

31. The bats are able to fly in dark since their wings produce:
(1) Sound waves (2) Ultrasonic waves
(3) Infra-red waves (4) Ultra voilet rays

Ans. (2)

32. If a person cannot see on object clearly when it is placed at more than 25cm. away from him; he is suffering from:
(1) myopia (2) hyper metropia
(3) astigmatism (4) none of these

33. Choose the correct sequence:
(A) Intensity of light (1) Properties of the mediums
(B) Colour of light (2) Refractive Index of medium
(C) Velocity of light (3) Amplitude of light
(D) Propagation of light (4) Frequency of light
(1) 2,4,1,3 (2) 3, 4, 2, 1
(3) 3,1,2,4 (4) 4, 2, 3, 1

34. A Pond is covered with a layer of ice and the external temperature is -30°C. The temperature of water in contact with lower surface of ice is:
(1) 4°C (2) 0°C
(3) –15°C (4) – 30°C

35. An air bubble in water will act like a:
(1) Convex Mirror (2) Concave Mirror
(3) Covex lens (4) Concave lens

36. A vehicle moving on a circular path experiences:
(1) Inertia (2) Centripetal force
(3) Gravitational pull of Earth (4) Centrifugal force

Ans. (2)

37. The colour of the sky looks blue because:
(1) Sky is made up of blue colour particles
(2) Blue colour is of longer wave length
(3) Blue colour is more prominent in Sunlight
(4) Blue colour of light is of shorter wave length so easily scattered by dust particles and water vapour

Ans. (4)

38. An ice cube is floating in a glass of water. How will the water level in the glass be affected when the ice cube melts?
(1) It will rise
(2) It will go down
(3) It will remain unchanged
(4) It would first go up later on it will go down

Ans. (3)