Dr.K.K.R GOWTHAM EDUCATIONAL INSTITUTIONS :: A.P & T.S

Class: VIII- CO,F1 **Marks: 100**

Sub: Maths, physics, Chemistry **Time: 2 ½ Hrs**

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I. Objective type questions : **50 × 2= 100 M**

Maths

1. Distance of the point (cotα,1) from origin is ______ [ ]

   a. $|\sec\alpha|$ b. $|\cot\alpha|$ c. $|\operatorname{cosec}\alpha|$ d. $|\tan\alpha|$

2. The centre of a circle is (0,0). If (3,2) is one end of a diameter then the other end is ______ [ ]

   a. (-3,-2) b. (3,-2) c. (-3,2) d. none

3. If the points (a,0) (0,b) and (1,1) are collinear, then $\frac{1}{a}+\frac{1}{b}=$ ___ [ ]

   a. -1 b. 1 c. -2 d. 0

4. Q,R,S are the points (-2,-1) (0,3) (4,0) respectively then the coordinates of P such that PQRS is a parallelogram is ____ [ ]

   a. (2,-6) b. (-6,2) c. (2,-4) d. (-3,2)

5. Circum centre of the Δ^{le} formed by the points (3,2) (3,-2) (5,2) is _____ [ ]

   a. (3,2) b. (4,0) c. (3,-2) d. (5,2)

6. The harmonic conjugate of (4,1) with respect to the points (3,2) and (-1,6) is _[ ]

   a. (-4,-1) b. (1,4) c. $\left(\frac{7}{6},\frac{8}{6}\right)$ d. $\left(\frac{7}{3},\frac{8}{3}\right)$

7. Slope of the line 4x+3y=9 is ________ [ ]

   a. 4/3 b. -4/3 c. ¾ d. 9/4

8. The line 4x+3y=7 intersects X axis at the point [ ]

   a. $(\frac{7}{4}, 0)$ b. $(-\frac{7}{4}, 0)$ c. (7,4) d. none

9. The distance between the parallel lines 3x+4y+2=0, 6x+8y+9=0 is ______ [ ]

   a. 1 b. 2 c. ½ d. 3

10. Normal form of the line x+y+$\sqrt{2}$ =0 is _______ [ ]

    a. $x\cos\frac{\pi}{4}+y\sin\frac{\pi}{4}=1$ c. $x\cos\frac{5\pi}{4}+y\sin\frac{5\pi}{4}=1$

    b. $x\cos\frac{3\pi}{4}+y\sin\frac{3\pi}{4}=1$ d. $x\cos\frac{7\pi}{4}+y\sin\frac{7\pi}{4}=1$

11. Tan 55^0 – tan 10^0 – tan 55^0. Tan 10^0 = _____ [ ]

    a. -1 b. 1 c. $-\sqrt{3}$ d. ½

12. Cos θ+ cos(240^0+θ) +cos(240^0-θ)= [ ]

    a. 1 b. -2 c. 3 d. 0

13. In ΔABC $\sum \frac{\sin(A-B)}{\cos A \cos B} =$ _____ [ ]

a. 0 b. 1 c. 2 d. ½

14. If $\tan\theta_1 = k \cot\theta_2$ then $\frac{\cos(\theta_1-\theta_2)}{\cos(\theta_1+\theta_2)} =$ _____ [ ]

a. $\frac{1+k}{1-k}$ b. $\frac{1-k}{1+k}$ c. $\frac{k+1}{k-1}$ d. $\frac{k-1}{k+1}$

15. If $2\tan A + \cot A = \tan B$ then $\cot A + 2\tan(A-B) =$ _____ [ ]

a. 1 b. 2 c. 0 d. -1

16. $\tan(\theta+135^0)\tan(\theta-135^0) =$ _____ [ ]

a. 0 b. -1 c. 5 d. 2

17. $\frac{1-\cos 2\theta}{\sin 2\theta} =$ _____ [ ]

a. $\cot\theta$ b. $\tan\theta$ c. $\tan\theta\cos\theta$ d. $-\sec\theta$

18. $\tan 10^0 \tan 50^0 \tan 70^0 =$ _____ [ ]

a. $\sqrt{3}$ b. $\frac{1}{\sqrt{3}}$ c. $\frac{\sqrt{3}}{2}$ d. $-\sqrt{3}$

19. $\frac{1}{\sin 10^0} - \frac{\sqrt{3}}{\cos 10^0} =$ _____ [ ]

a. 4 b. -4 c. 2 d. -2

20. $\tan^6\frac{\pi}{9} - 33\tan^4\frac{\pi}{9} + 27\tan^2\frac{\pi}{9}$ is equal to [ ]

a. -3 b. $\sqrt{3}$ c. 3 d. none

Physics

21. Find the area bounded under the curve $y=3x^2+6x+7$ and the x- axis with the coordinates at x= 5 and x=10 [ ]

a. 1125 b. 1135 c. 1235 d. 125

22. The displacement of a body caries with time as $S= t^3+3t^2+2t-1$. If the velocity at t= 4 sec is [ ]

a. 74 m/s b. 60 m/s c. 72 m/s d. 54 m/s

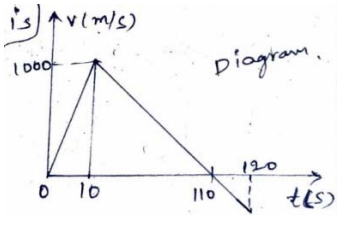
23. The velocity of particle is $v= V_0+gt+st^2$. If its position is x=0 at t= 0 then find its displacement after unit time. [ ]

a. $V_0t + \frac{gt^2}{2} + \frac{ft^2}{2}$ b. $V_0+g+\frac{f}{3}$ c. $V_0+\frac{g}{2}+\frac{f}{3}$ d. $V_0t + \frac{gt^2}{2} + ft^3$

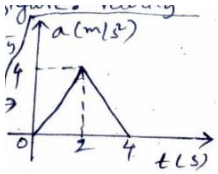
24. The graph shows the variation of velocity of rocket with time . the maximum height attained by the rocket is [ ]

a. 1.1 km c. 5 km

b. 55km d. none of these



25. Acceleration time graph of a particle moving in a straight line is shown in figure. Velocity of particle at t= 0 is 2m/s velocity at the end of 4th second is [ ]



a. 8m/s c. 10m/s

b. 12 m/s d. 14 m/s

26. The relation between time to and distance x is $x= ax^2+bx$ where a and b are constantly find the acceleration [ ]

a. $-2av^3$ b. $-2av^2$ c. $2av^3$ d. -2av

27. Sand fally on to convey or belt at a constant rate 2kg/ sec. if the belt is moving at 0.1 m/sec. then the extra force required to maintain speed of belt is [ ]

a. 2N b. 0.2N c. 20N d. zero

28. The displacement x of a particle at any instant is related to its velocity as $v= \sqrt{2x+9}$. Its acceleration in m/s^2 is [ ]

a. 2 b. 1 c. 4 d. 0.1

29. A body is thrown with velocity (4i+3j) m/s its maximum height is ($g= 10\ m/s^2$)[ ]

a. 2.5m b. 0.8m c. 0.9m d. 0.45m

30. For a projectile the ratio of maximum height reached to square of flight time is[ ]

a. 5:4 b. 5:2 c. 5:1 d. 10:1

31. A body projected with velocity 30 m/s reaches its maximum height in 15 sec. its range is ($g= 10m/s^2$) [ ]

a. 45m b. 108m c. $45\sqrt{3}$ m d. 54m

32. A hose pipe lying on the ground shoots a stream of water upwards at an angle 60^0 to the horizontal at a speed of 20 m/s. the water strikes a wall 20m away at a height of ($g= 10\ m/s^2$) [ ]

a. 14.64m b. 7.32m c. 29.28m d. none of the above

33. A person throws a bottle into a dustbin at the same height as he is 2m away at an angle of 45^0. The velocity of thrown is [ ]

a. g b. $\sqrt{g}$ c. 2g d. $\sqrt{2}$ g

34. a body is projected horizontally from the top of tower with a velocity of 30m/s. the velocity of the body 4 sec after projection is ($g= 10m/s^2$) [ ]

a. 40 m/s b. 20 m/s c. 50 m/s d. 100m/s

35. The height and width of each step of a staircase are 20cm and A ball rolly off the top of a stair with horizontal velocity v and hits the fifth step. The magnitude of V is [$g= 10m/s^2$] [ ]

a. $1.5\sqrt{5}$ m/s b. $3\sqrt{5}$ m/s c. 7.5 m/s d. 1.5 m/s

36. Torr is a unit of [ ]

a. Mass b. volume c. pressure d. density

37. 20 litres of hydrogen gas at NTP weight about [ ]

a. 12.2g b. 44.8g c. 1.8g d. 20g

38. At constant temperature for a given mass of gas, pressure of the gas if volume'v' becomes three times [ ]

a. P b. p/4 c. p/3 d. 3p

39. An open vessel at 27^0C is heated until three fourth mass of the air in it has been expelled neglecting the expansion of the vessel, the temperature to which the vessel has to be heated is [ ]

a. 927^0C b. 108^0C c. 1000^0C d. 477^0C

40. What percentage of volume of air will be expelled from a vessel containing 600 ml at 27^0 when it is heated to 37^0C at the same pressure [ ]

a. 3.33% b. 27% c. 67% d. 66%

41. Gas deviate from ideal behaviour at [ ]

a. Low T and high 'P' c. high T and high P

b. Low T and low P d. high T and low P

42. The density of a gas at STP is 2g/l. its molecular weight is [ ]

a. 22.4 b. 56 c. 44.8 d. 30

43. The mass of 2.46 lit of CH_4 at 1.5 atm and 27^0C is [ ]

a. 1.6g b. 2.4g c. 22.4g d. 3.0g

44. The vapour density of a gas is 11.2. the volume occupied by 10g of the gas at STP is [ ]

a.10L b. 1L c. 11.2L d. 5.6L

45. the number of oxygen molecule present in 1 lit flask at a pressure of 101.325 $X10^{-12}$ KPa and temperature 101.325k is [ ]

a. 7.243 X 10^{10} b. 7.243 X 10^{11} c. 7.243 X 10^{12} d. 7.243 X 10^{13}

46. mixing of two gases by diffusion is [ ]a

a. reversible b. irreversible c. exothermic d. endothermic

47. the rate of diffusion of gas A is double the rate of gas B. the ratio of their molecular weight is [ ]

a. 1:2 b. 1:4 c. 2:1 d. 4:1

48. Dalton's law of partial pressures is applicable to [ ]

a. $NO+O_2$ b. H_2+Cl_2 c. NH_3+HCl d. CO_2+O_2

49. kinetic energy of 1 mole of oxygen gas in calories [ ]

a. 2T b. 3T c. 1.5T d. 0.5T

50. the root mean square velocity of an ideal gas at constant pressure varies with density (d) as [ ]

a. d^2 b.d c. $\sqrt{d}$ d. $1/\sqrt{d}$