

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

**Class: VIII- F2,f3**

**Marks: 100**

**Sub: Maths, physics, chemistry**

**Time: 2 ½ Hrs**

**I. Objective type questions :**

**50 × 2= 100 M**

Maths

1. The harmonic conjugate of (4,-2) W.r.to (2,-4) and (7,1) is [ ]  
a. (-8, -14)                      b. 2,3                      c. (-2,-3)                      d. (13,-5)
2. The points (0,-1) (-2,3) (6,7) (8,3) form [ ]  
a. A parallelogram                      b. a rectangle                      c. a rhombus                      d. a square
3. The orthocenter of the  $\Delta^{le}$  formed by A (-1,0) B (-2,  $\frac{3}{4}$ ) C (-3, -7/6) [ ]  
a. (-3,-2)                      b. (1,3)                      c. (-1,2)                      d. none
4. Co ordinates of the point dividing the line segment joining A (1,-2) B (4,7) internally in the ratio 1:2 are [ ]  
a. (1,2)                      b. (2,1)                      c. (4,3)                      d. (7,2)
5. The 1<sup>st</sup> and 2<sup>nd</sup> points of trisection of the join of (-2, 11) (-5, 2) are [ ]  
a. (-3, 8) (-4,6)                      b. (-3,9) (-4,5)                      c. (-3,8) (-4, 5)                      d. (-3,-4) (8,-5)
6. Equation of the st line containing the point (1,2) and (3,4) [ ]  
a. X+y+1=0                      b. x-y +1 =0                      c.4x+y=1                      d. x+y=2
7. The equation of sides of  $\Delta^{le}$  are x+y-5 =0, x-y +1=0 and y-1 =0 then the circum centre is [ ]  
a. (2,1)                      b. (1,7)                      c. (2,-2)                      d. (1,-2)
8. If 6x+8y+7-k (2x+4y+5) =0 is parallel to y axis then k [ ]  
a. 1                      b. 3                      c. 2                      d. 1
9. If P, Q are two points on the line 3x+4y+15=0 such that Op = OQ = 9 then the area  $\Delta OPQ$  [ ]  
a.  $6\sqrt{2}$                       b.  $9\sqrt{2}$                       c.  $12\sqrt{2}$                       d.  $18\sqrt{2}$
10. Image of (2,3) W.r.t to (-1,3) is [ ]  
a. (3,-2)                      b. (1,1)                      c. (-4, 3)                      d. (3,7)
11.  $(\sqrt{1-\sin^2 100})$  (sec 100<sup>o</sup>) [ ]  
a. -1                      b. 0                      c. 1                      d. 2
12. If  $\tan 20^0 = P$  then  $\frac{\tan 250^0 + \tan 340^0}{\tan 200^0 - \tan 110^0} =$  [ ]  
a.  $\frac{1+p}{1-p}$                       b.  $\frac{1-p}{1+p}$                       c. 0                      d.  $\frac{1-p^2}{1+p^2}$



25. A body projected with velocity 30m/s reaches its maximum height in 1.5 sec. its range is ( $g = 10\text{m/s}^2$ ) [      ]  
 a. 45m                      b. 108m                      c.  $45\sqrt{3}$  m                      d. 54m
26. A body is projected with velocity 'u' is so that the maximum height is thrice the horizontal range then the maximum height is ? [      ]  
 a.  $\frac{72u^2}{145g}$                       b.  $\frac{6}{\sqrt{45}} \frac{u^2}{g}$                       c.  $\frac{u^2}{2g}$                       d.  $\frac{145}{72} \frac{u^2}{g}$
27. A body is projected with a velocity 'u' so that the horizontal range is twice the maximum height. Then the maximum height is [      ]  
 a.  $\frac{u^2}{2g}$                       b.  $\frac{u^2}{g}$                       c.  $\frac{5u^2}{4g}$                       d.  $\frac{2u^2}{5g}$
28.  $F(x) = 4x+3$  find  $f(x)$  [      ]  
 a. -11                      b. 11                      c. 22                      d. 7
29.  $F(x) = \cos x + \sin x$ . Find  $f(\pi/2)$  [      ]  
 a. 1                      b. 2                      c. 3                      d. 0
30.  $F(x) = \log x^3$  and  $g(x) = \log x$ ; which of the following statements is/ are true? [      ]  
 a.  $F^2(x) = g(x)$                       b.  $3f(x) = g(x)$                       c.  $f(x) = 3g(x)$                       d.  $f(x) = (g(x))^3$
31. If  $y = x^2 + x + 8$ , then  $\frac{dy}{dx}$  is [      ]  
 a.  $2x+x$                       b.  $2x+1$                       c.  $2x-1$                       d.  $2x+2$
32. If  $y = x^2 + \sin x$ , then  $\frac{dy}{dx}$  is [      ]  
 a.  $2x + \cos x$                       b.  $2x - \cos x$                       c.  $x + \cos x$                       d.  $x + \sin x$
33. Find  $d^2y/dx^2$  if  $y = \sin x + \cos x$  [      ]  
 a.  $\cos x - \sin x$                       b.  $\sin x - \cos x$                       c.  $\cos x + \sin x$                       d.  $-\sin x - \cos x$
34. If  $y = (x-1)(x^2+x+1)$ , then  $\frac{dy}{dx}$  is [      ]  
 a.  $X^2$                       b.  $3x^2$                       c.  $-3x^2$                       d.  $2x^2$
35. If  $y = (2x+1)^5$ , then  $\frac{dy}{dx}$  is [      ]  
 a.  $10(2x+1)^4$                       b.  $(2x+1)^4$                       c.  $10(2x+1)^6$                       d.  $(2x+1)^6$

### Chemistry

36. Measurable properties of gases from the given are [      ]  
 1. Mass                      2. volume                      3. Pressure                      4. Temperature  
 a. Only b,c                      b. only b, c, d                      c. only c, d                      d. a, b, c, d
37. Volume of a gas at  $0^\circ \text{C}$  is doubled at \_\_\_\_\_  $^\circ \text{C}$  temperature keeping pressure constant is [      ]

- a. 273 K                      b. 2°C                      c. 243°C                      d. 546°C

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

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

39. A sample of a given mass of gas at a constant temperature occupies 95 cm<sup>3</sup> under a pressure of  $9.962 \times 10^4 \text{ NM}^{-2}$ . At the same temperature its volume at a pressure of  $10 \times 10^4 \text{ NM}^{-2}$  is [     ]

- a. 190 cm<sup>3</sup>                      b. 93.42 cm<sup>3</sup>                      c. 46.5 cm<sup>3</sup>                      d. 47.5 cm<sup>3</sup>

40. Volume of 1 Litre of a gas is nearly equal to [     ]

- a. 10 dm<sup>3</sup>                      b. 1 m<sup>3</sup>                      c. 10<sup>3</sup>m<sup>3</sup>                      d. 10<sup>3</sup>cm<sup>3</sup>

41. Ideal gas obeys [     ]

- a. Boyles Law                      b. Charne’s Law                      c. Avagadro’s Law                      d. All of the above

42. The density of a gas at Stp is 2g ILt. Its molecular weight is [     ]

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

43. A five litre flask contains 35 gm of N<sub>2</sub>, 3g of H<sub>2</sub> and 8g of O<sub>2</sub> at 27°C. The total pressure exerted by the mixture of these gases is [     ]

- a. 92.4 atm                      b. 0.924 atm                      c. 9.24 atm                      d. 924 atm

44. The rate of diffusion of Nitrogen gas in a diffusion tube. The molecular weight of X is \_\_\_\_\_ g mole<sup>-1</sup> [     ]

- a. 63                      b. 36                      c. 54                      d. 45

45. 180ml of Hydro carbon having the molecular weight 16 diffuses in 1.5 min under similar conditions, The time taken by 120ml of SO<sub>2</sub> to diffuse is [     ]

- a. 2 min                      b. 1.5 min                      c. 1 min                      d. 1.75 min

46. Which of the following is independent of temperature of a gas [     ]

- a. Density                      b. Rate of diffusion                      c. vapour density                      d. RMS velocity

47. According to Kinetic energy of Gases, The energy per mole of a gas is equal to

- a. RT                      b. 3RT                      c. 0.5 RT                      d. 1.5 RT                      [     ]

48. The kinetic energy of m moles of an ideal gas is given by The expression

- a.  $\frac{3}{2} RT$                       b.  $\frac{3}{2} nRT$                       c.  $\frac{2}{3} RT$                       d.  $\frac{2}{3} nRT$

49. The K.E of 4 moles of O<sub>2</sub> at 47°C is \_\_\_\_\_ [     ]

- a. 1280 Cal                      b. 2560 Cal                      c. 1920 Cal                      d. 3840 Cal

50. Average velocity of a gas is 13,820 cm/sec Then the RMS Velocity is [     ]

- a. 14,996 cm/Sec                      b. 12,250 cm/Sec                      c. 10,250 cm/sec                      d. 1225 cm/sec