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**

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

Maths

1. $6\sin 20^0 - 8\sin^3 20^0$ [ ]

   a. $\sqrt{3}$ b. 3 c. 0 d. ½

2. $\text{Sin}10^0 \sin 30^0 \sin 50^0 \sin 70^0 =$ [ ]

   a. 1/16 b. 2/16 c. 3/16 d. 4/16

3. $\dfrac{2}{\sqrt{2+\sqrt{2+\sqrt{2+2\cos 8\theta}}}} = (0 < \theta < \dfrac{\pi}{8})$ [ ]

   a. Cosθ b. secθ c. –secθ d. tanθ

4. $\dfrac{\sin A + \sin 3A + \sin 5A + \sin 7A}{\cos A + \cos 3A + \cos 5A + \cos 7A} = \tan \Rightarrow x =$ [ ]

   a. 4A b. 3A c. 2A d.A

5. $\dfrac{\sin 3\theta}{1 + 2\cos 2\theta} =$ [ ]

   a. Cosθ b. sinθ c. tanθ d. secθ

6. If cosx+cosy= 4/5 , cosx-cosy =2 then 14 tan $\left(\dfrac{x-y}{2}\right)$+5cot$\left(\dfrac{x+y}{2}\right)$= [ ]

   a. 0 b. 1 c. 2 d. 4

7. $\dfrac{1-\tan^2(45^0-\theta)}{1+\tan^2(45^0-\theta)} =$ [ ]

   a. Sin2θ b. cos2θ c. tan2θ d. cot2θ

8. If α and β are angler in the first quadrant tanα = 1/7 and sinβ = $\dfrac{1}{\sqrt{10}}$ then α +2β = ___ [ ]

   a. $\dfrac{\pi}{6}$ b. $\dfrac{\pi}{4}$ c. $\dfrac{\pi}{3}$ d. $\dfrac{\pi}{2}$

9. $\dfrac{1}{\sin 10^0} - \dfrac{\sqrt{3}}{\cos 10^0} =$ ______ [ ]

   a. 4 b. -4 c. 3 d. 2

10. If cosθ= -3/5 and $\theta \in \theta_3$ then tan θ/2= [ ]

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

11. if A= 320^0 then 2 sin A/2 = [ ]

    a. $\sqrt{1+\sin A} + \sqrt{1-\sin A}$ c. - $\sqrt{1+\sin A} + \sqrt{1-\sin A}$

b. $\sqrt{1+\sin A}-\sqrt{1-\sin A}$ d. $-\sqrt{1+\sin A}-\sqrt{1-\sin A}$

12. 2 (bc+cosA +ca cosB +ab cosC)= [ ]

a. $a^2+b^2+c^2$ b. $a^2+b^2-c^2$ c. $a^2-b^2+c^2$ d. $b^2+c^2-a^2$

13. $\frac{b^2-c^2}{a^2}$ = _____ [ ]

a. $\frac{\sin(B-C)}{\sin(B+C)}$ b. $\frac{\cos(B-C)}{\cos(B+C)}$ c. $\frac{\sin(B+C)}{\sin(B-C)}$ d. $\frac{\cos(B+C)}{\cos(B-C)}$

14. $\frac{a\cos A+b\cos B+c\cos c}{a+b+c}$ = [ ]

a. r/R b. R/r c. r+R d. r-R

15. $\frac{r_1(r_2+r_3)}{\sqrt{r_1r_2+r_2r_3+r_1r_3}}$ = _____ [ ]

a. A b. b c. c d. 1

16. If $A=60^0$ $B=30^0$ then a:b:c [ ]

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

17. bcos(C+θ)+c cos(B-θ)= [ ]

a. a cosθ b. asinθ c. a tanθ d. a cotθ

18. if sinθ = $\frac{a}{a+c}$, then $\frac{2\sqrt{bc}}{b+c}\cos\frac{A}{2}$ = [ ]

a. cosθ b. sinθ c. cotθ d. tanθ

19. if a= 40, C= $40\sqrt{3}$. B= 30^0 then nature of triangle [ ]

a. right angled b. isoseceler c. equilateral d. scalene

20. $\sum\frac{a}{s-a}\left(\tan\frac{B}{2}-\tan\frac{C}{2}\right)$ = [ ]

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

Physics

21. Find the magnitude of momentum of a body of mass 10kg moving with a velocity of 5 m/s [ ]

a. 40kg m/s b. 30 kg m/s c. 50 kg m/s d. 60kg m/s

22. A body of mass 5kg started from a rest with an acceleration of $4m/s^2$. Its momentum after 5 sec is

a. 20kgm/s b. 100 kgm/s c. 4 kg m/s d. 25 kg m/s

23. A body of mass 'm' falls from a height h_1, from a height h_2, the magnitude of the change in momentum during the impact with the ground. [ ]

a. mg (h_1+h=2) b. m $\left(\sqrt{2}gh1+\sqrt{2}gh2\right)$ c. m $\left(\sqrt{2}gh1-\sqrt{2}gh2\right)$ d. zero

24. A boy of mass 50kg standing on ground exeric a force of 500N on the ground the force exerted by the ground on the boy will be [ ]

a. 50N b. 25000N c. 10N d. 500N

25. A 6kg balls strikes a vertical wall with a velocity 34m/s and rebounds with a velocity of 26m/s. the impulse is [ ]

a. 60Ns b. 180Ns c. 48Ns d. 360Ns

26. A player caught a cricket ball of mass 150kg moving at rest 20m/s. if catching process is completed in 0.1 sec. the force of the blow exerted by the ball on the hand of the player is equal to [ ]

a. 30N b. 300N c. 150N d. 3N

27. A body of mass 5kg at rest is acted upon by a force. Its velocity changes to 5m/s. find its initial and final momentum [ ]

a. 40 kg m/s , 0 b. 0, 25 kg m/s c. 0,50 kg m/s d. 20 kgm/s , 0

28. A constant force wets on a body of mass 10kg and produces in if an acceleration of 0.2 m/s^2. Calculate the magnitude of force acting on the body [ ]

a. 1N b. 2N c. 3N d. 4N

29. The acceleration produced by a force of 5N acting on a mass of 20kg in m/s^2 is[ ]

a. 4 b. 100 c. 0.25 d. 2.5

30. A force of 50N acts on a mass 10kg at rest what is acceleration what is its initial velocity after 5 sec, if the same force acts [ ]

a. $2m/s^2$, 10m/s b. $4m/s^2$, 5m/s c. $5m/s^2$, 25m/s d. $6m/s^2$, 1m/s

31. An open knife edge of M is dropped from a height h n a wooden floor. If the blade penetrate distance ‘S’ into the wood the average resistance offered by the wood to the blade is [ ]

a. Mg b. Mg (1-h/s) c. Mg (1+h/s) d. Mgh

32. A particle of mass 0.3 kg is subjected to a force F= -kx with K= N/m. what will be its initial acceleration if it is related from a point x= 20cm? [ ]

a. $5m/s^2$ b. 10 m/s^2 c. 2.5 m/s^2 d. 100 m/s^2

33. A constant force acts on a body of mass 500 gm at rest for 2 sec. if the body moves through 27m during the time impulse of the force is [ ]

a. 1.35 kg m/s b. 13.5 Ns c. 1.35 Ns d. 2.7 kg m/s

34. A constant retarding force of 20N acts on a body of mass 5kg moving initially with a speed of 10m/s. how long does the body take to stop? [ ]

a. 1 sec b. 1.5 sec c. 2 sec d. 2.5 sec

35. A 5 gm buket acquires a speed of 120m/s in a gun with barred length 2m. the arrange force exerted on the bullet is [ ]

a. 3.6N b. 18N c. 36N d. 72N

Chemistry

36. First periodic table was drafted by [ ]

a. Mosely b. newlands c. dobereiner d. mendeleef

37. The period that contains only gaseous element is [ ]

a. 1 b. 2 c. 3 d. 4

38. In lother neyer plot, perks are obtained by [ ]

a. Alaki metals b. alkaline earth metals c. halogens d. noble gases

39. The general alecfronic configuration, of f block element is [ ]

a. $\mathbf{Ns^2}$ np^6 (n-1) d^{0-1} (n-2) f^{1-14} c. ns^2 $nd^{0,1}nf^{1-14}$

b. Ns^2(n-1) $d^{0,1}$ (n-2)f^{1-14} d. ns^2 (n-1) $d^{0,1}$ (n-1)f^{1-14}

40. The general electronic configuration of elements of carbon family [ ]

a. Ns^2np^4 b. ns^1np^3 c. ns^2np^1 d. ns^2np^2

41. The size of the following species increases in the order [ ]

a. $Mg^{+2} < Na^{+1} < F^{-1} < Al^{+3}$ c. $Na^{-1} < F^{*1} < Al^{+3}$ Mg^{+2}

b. $Al^{+3} < Mg^{+2} < Na^{+1} < F^{-1}$ d. $Na^{+1} < Al^{+3} < Mg^{+2} < F^{-1}$

42. The correct order of electron affinity of the element of oxygen family in the periodic table is [ ]

a. 0 > s > Se b. S > O > Se c. S > Se > O d. Se > O > s

43. Maximum oxidation state (+8) is exhibited by [ ]

a. Co & Ni b. Ru & Os c. Co & I d. Te & I

44. The maximum oxidation state of chlorine with respect to oxygen is [ ]

a. +1 b. +7 c. +5 d. -1

45. Least acidic among the following is [ ]

a. Sio_2 b. CO_2 c. P_4 O_{10} d. N_2 O_5

46. The ionization energy and electron affinity of an element are 13.0ev and 3.8 ev respectively its electro negativity is [ ]

a. 2.8 b. 3.0 c. 3.5 d. 4.0

47. Ionization energy of mg to Mg^{+2} is 22.67 ev/ atom if the first ionization energy is 738 KJ. Mol^{-1} the second ionization energy of Mg is (kj mol^{-1}) [ ]

a. 1448 b. 1702 c. 738 d. 1476

48. The correct order of sizes of various species of iron is [ ]

a. $Fe < Fe^{++} < Fe^{+++}$ c. $Fe^{+++} = Fe^{++} < Fe$

b. $Fe^{+++} < Fe^{++} < Fe$ d. $Fe = Fe^{++} > Fe^{+++}$

49. Which is the largest in size [ ]

a. 0^{-2} b. F c. Mg^{+2} d. Na^{+1}

50. The approximate size of an atom is [ ]

a. 10^{-6} m b. 10^{-8}m c. 10^{-10}m d. 10^{-12}m