

Date: 20.11.2022

Max. Marks: 100 Date: 20.11.2 ABHIMANYU BATCH PHYSICS : REVISION TEST-3 (SET B) Topic: Ray Optics + Circular Motion + Gravitation + Wave Optics + Rotational Motion + Elasticity

- A body is just being revolved in a vertical circle of radius R with a uniform speed. The string breaks when the 1. body is at the highest point. The horizontal distance covered by the body after the string breaks is $R\sqrt{2}$ 4R (a) 2R (b) R (c) (d) The angle of banking is independent of 2. speed of vehicle (b) radius of curvature of road (a) (c) height of inclination (d) None of the above 3. 320 km above the surface of earth, the value of acceleration due to gravity is nearly 90% of its value on the surface of the earth. Its value will be 95% of the value on the earth's surface (a) nearly 160 km below the earth's surface (b) nearly 800 km below the earth's surface nearly 640 km below the earth's surface (d) nearly 320 km below the earth's surface (c) The acceleration due to gravity at a height $1/20^{\text{th}}$ of the radius of the earth above the earth surface is 9 ms⁻². Its 4. value at a point at an equal distance below the surface of the earth (in ms⁻²) is about (a) 8.5 (b) 9.5 9.8 (d) 11.5 (c) 5. A solid sphere of mass M and radius R has a spherical cavity of radius R/2 such that the centre of cavity is at a distance R/2 from the centre of the sphere. A point mass m is placed inside the cavity at a distance R/4 from the centre of sphere. The gravitational pull between the sphere and the point mass m is
 - (a) $\frac{11 \text{GMm}}{\text{R}^2}$ (b) $\frac{14 \text{GMm}}{\text{R}^2}$ (c) $\frac{\text{GMm}}{2\text{R}^2}$ (d) $\frac{\text{GMm}}{\text{R}^2}$



6. A disc of radius R and thickness $\frac{R}{6}$ has moment inertia/about an axis passing through its centre perpendicular to its plane. Disc is melted and reduced into a solid sphere. The moment of inertia of a sphere about its diameter is

(a)
$$\frac{1}{5}$$
 (b) $\frac{1}{6}$ (c) $\frac{1}{32}$ (d) $\frac{1}{64}$

7. Let M be the mass and L be the length of a thin uniform rod. In first case, axis of rotation is passing through centre and perpendicular to the length of the rod. In second case, axis of rotation is passing through one end and perpendicular to the length of the rod. The ratio of radius of gyration in first case to second case is

(a) 1 (b)
$$\frac{1}{2}$$
 (c) $\frac{1}{4}$ (d) $\frac{1}{8}$

8. A cord is wound around the circumference of wheel of radius r. The axis of the wheel is horizontal and moment of inertia about it is *l*/. The weight mg is attached to the end of the cord and falls from rest. After falling through a distance h, the angular velocity of the wheel will be

(a)
$$[mgh]^{1/2}$$
 (b) $\left[\frac{2mgh}{1+2mr^2}\right]^{1/2}$ (c) $\left[\frac{2mgh}{1+mr^2}\right]^{1/2}$ (d) $\left[\frac{mgh}{1+mr^2}\right]^{1/2}$

9. A satellite of mass m is revolving in circular orbit of radius r round the earth. Its angular momentum w.r.t the centre of its orbit is (M = mass of earth, G = universal gravitational constant)

(a) $(GMmr)^{1/2}$ (b) $(GMm^2r)^{1/2}$ (c) $(GMm^2r^2)^{1/2}$ (d) $(GM^2m^2r)^{1/2}$

10. A ring and a disc roll on the horizontal surface without slipping with same linear velocity. If both have same mass and total kinetic energy of the ring is 4 J then total kinetic energy of the disc is

- (a) 3J (b) 4J (c) 5J (d) 6J
- 11. When light wave suffers reflection at the interface from air to glass, then the change in phase of the reflected wave is equal to

(a) zero (b) $\frac{\pi}{2}$ (c) π (d) 2π



- 12. Two identical glass ($\mu_g = 3/2$) equi-convex lenses of focal length f each are kept in contact. The space between the two lenses is filled with water ($\mu_w = 4/3$). The focal length of the combination is
 - (a) f/3 (b) f (c) $\frac{4f}{3}$ (d) $\frac{3f}{4}$

13. An air bubble in a glass slab with refractive index 1.5 (near normal incidence) is 5 cm deep when viewed from one surface and 3 cm deep when viewed from the opposite face. The thickness (in cm) of the slab is

- (a) 8 (b) 10 (c) 12 (d) 16
- 14. An person can see objects clearly only when they lie between 50 cm and 400 cm from his eyes. In order to increase the maximum distance of distinct vision to infinity, the type and power of the correcting lens, the person has to use, will be
 - (a) convex , +2.25 D (b) $\operatorname{concave}$, -0.25 D (c) $\operatorname{concave}$, -0.2 D (d) convex , +0.15 D
- 15. An astronomical telescope has objective and eye-piece of focal lengths 40 cm, 4 cm, respectively. To view an object 200 cm away from the objective, the lenses must be separated by a distance
 - (a) 46.0 cm (b) 50.0 cm (c) 54.0 cm (d) 37.3 cm
- 16. Match the corresponding entries of column I with column II. [Where, m is the magnification produced by the mirror]

	Column I		Column II
A.	m = -2	1.	Convex mirror
В.	m = -1/2	2.	Concave mirror
C.	m = +2	3.	Real image
D.	m = +1/2	4.	Virtual image

- (a) $A \rightarrow 1 \text{ and } 3, B \rightarrow 1 \text{ and } 4, C \rightarrow 1 \text{ and } 2, D \rightarrow 3 \text{ and } 4$
- (b) $A \rightarrow 1 \text{ and } 4, B \rightarrow 2 \text{ and } 3, C \rightarrow 2 \text{ and } 4, D \rightarrow 2 \text{ and } 3$
- (c) $A \rightarrow 3 \text{ and } 4, B \rightarrow 2 \text{ and } 4, C \rightarrow 2 \text{ and } 3, D \rightarrow 1 \text{ and } 4$
- (d) $A \rightarrow 2 \text{ and } 3, B \rightarrow 2 \text{ and } 3, C \rightarrow 2 \text{ and } 4, D \rightarrow 1 \text{ and } 4$



17. Calculate the focal length of a reading glass of a person, if the distance of distinct vision is 75 cm.

	(a)	75.2 cm	(b)	25.6 cm	(c)	100.4 cm	(d)	37.5 cm
18.	Rainbo	w is observed when	the sun	is				
	(a)	in front of the obse	erver		(b)	behind the observer		
	(c)	vertically above th	e observ	ver	(d)	in any of these posit	tions	
19.	Sun is	visible a little before	e the act	ual sunrise and until a	ı little af	ter the actual sunset.	This is d	ue to
	(a)	total internal reflect	ction		(b)	reflection		

- (c) refraction (d) polarisation
- 20. A mark at the bottom of a liquid appears to rise by 0.1 m. The depth of the liquid is 1 m. The refractive index of the liquid is
 - (a) 1.33 (b) 9/10 (c) $\frac{10}{9}$ (d) 1.5
- 21. Let a steel bar of length *l*, breadth b and depth d be loaded at the centre by a load W. Then the sag of bending of beam is (Y = Young's modulus of material of steel)

(a)
$$\frac{Wl^2}{2bd^2Y}$$
 (b) $\frac{Wl^3}{4bd^3Y}$ (c) $\frac{Wl^2}{2bd^3Y}$ (d) $\frac{Wl^3}{4bd^2Y}$

22. A string of length L and force constant K is stretched to obtain extension l. It is further stretched to obtain extension l_1 . The work done in second stretching is

- (a) $\frac{1}{2}Kl_1(2l+l_1)$ (b) $\frac{1}{2}Kl_1^2$ (c) $\frac{1}{2}K(l^2+l_1^2)$ (d) $\frac{1}{2}K(l_1^2-l^2)$
- 23. Four wires of the same material are stretched by the same load. Which one of them will elongate most if their dimensions are as follows
 - (a) L = 100 cm, r = 1 mm (b) L = 200 cm, r = 3 mm
 - (c) L = 300 cm, r = 3 mm (d) L = 400 cm, r = 4 mm



24. Which of the following relation is true?

- (a) $Y = 2\eta(1 2\sigma)$ (b) $Y = 2\eta(1 + 2\sigma)$ (c) $Y = 2\eta(1 \sigma)$ (d) $(1 + \sigma)2\eta = Y$
- 25. The load V elongation graph for four wires of the same materials shown in the figure. The thinnest wire is represented by the line.



- 26. The length of an elastic string is a metre when the longitudinal tension is 4 N and b metre when the longitudinal tension is 5 N. The length of the string in metre when longitudinal tension is 9 N is
- (a) a b
 (b) 5b 4a
 (c) 2b ¹/₄a
 (d) 4a 3b

 27. A long spring is stretched by 2 cm and its potential energy is U. If the spring is stretched by 10 cm; its potential energy will be
 (c) U/5
 - (a) U/5 (b) U/25 (c) 5 U (d) 25 U

28. According to Hooke's law of elasticity, if stress is increased, then the ratio of stress to strain.

(a) becomes zero (b) remains constant (c) decreases (d) increases

- 29. The increase in pressure required to decrease the 200 L volume of a liquid by 0.004% (in kPa) is (Bulk modulus of the liquid = 2100 MPa)
 - (a) 8.4 (b) 84 (c) 92.4 (d) 168
- 30. The force constant of a wire is K and that of another wire is 2K. When both the wires are stretched, then the work done

(a) $W_2 = 2W_1^2$ (b) $W_2 = 2W_1$ (c) $W_2 = W_1$ (d) $W_2 = 0.5 W_1$





- 31. A prism can have a maximum refracting angle of (C = critical angle for the material of the prism)
 - (a) 60° (b) C
 - (c) 2C (d) slightly less than 180°
- 32. You are given four sources of light each one providing a light of a single colour-red, blue, green and yellow. Suppose the angle of refraction for a beam of yellow light corresponding to a particular angle of incidence at the interface of two media is 90°. Which of the following statement is correct, if the source of yellow light is replaced with that of other lights without changing the angle of incidence?
 - (a) The beam of red light would undergo total internal reflection
 - (b) The beam of red light would bend towards normal while it gets refracted through the second medium
 - (c) The beam of blue light would undergo total internal reflection
 - (d) The beam of green light would bend away from the normal as it gets refracted through the second medium
- 33. When a lens of refractive index μ_1 is placed in a liquid of refractive index μ_2 , then the lens looks to be disappeared only, if
 - (a) $\mu_1 = \mu_2/2$ (b) $\mu_1 = 3\mu_2/2$ (c) $\mu_1 = \mu_2$ (d) $\mu_1 = 5\mu_2/2$
- 34. When sun light is scattered by minute particles of atmosphere, then the in intensity of light scattered away is proportional to
 - (a) $(\text{wavelength of light})^4$ (b) $(\text{frequency of light})^4$
 - (c) $(wavelength of light)^2$ (d) $(frequency of light)^2$
- 35. If KE of the particle of mass m performing UCM in a circle of radius r is E. Find the acceleration of the particle
 - (a) $\frac{2E}{mr}$ (b) $\left(\frac{2E}{mr}\right)^2$ (c) 2mr (d) $\frac{4E}{mr}$
- 36. If α is angular acceleration, ω is angular velocity and a is the centripetal acceleration then, which of the following is true?

(a)
$$\alpha = \frac{\omega a}{v}$$
 (b) $\alpha = \frac{v}{\omega a}$ (c) $\alpha = \frac{av}{\omega}$ (d) $\alpha = \frac{a}{\omega v}$



- 37. A car is moving with speed 30 ms⁻¹ on a circular path of radius 500 m. It speed is increasing at a rate of 2 ms⁻², what is the acceleration of the car?
 - (a) 2 ms^{-2} (b) 2.7 ms^{-2} (c) 1.82 ms^{-2} (d) 9.82 ms^{-2}

38. A particle of mass m is rotating in a plane in circular path of radius r. Its angular momentum is L. The centripetal force acting on the particle is

(a)
$$\frac{L^2}{mr}$$
 (b) $\frac{L^2m}{r}$ (c) $\frac{L^2}{m^2r^2}$ (d) $\frac{L^2}{mr^3}$

39. When a ceiling fan is switched off, angular velocity falls to half while it makes 36 rotations. How many more rotations will make before coming to rest?

(a) 24 (b) 36 (c) 18 (d) 12

40. An electric fan has blades of length 30 cm as measured from the axis of rotation. If the fan is rotating at 1200 rpm, the acceleration of a point on the tip of the blade is about

- (a) 1600 ms^{-2} (b) 4737.4 ms^{-2} (c) 2370 ms^{-2} (d) 5055 ms^{-2}
- 41. A disc of radius 'R' abd thickness $\frac{R}{6}$ has moment of inertia 'l' about an axis passing through its centre and perpendicular to its plane. Disc is melted and recast into a solid sphere. The moment of inertia of a sphere about its diameter is
 - (a) $\frac{l}{5}$ (b) $\frac{l}{6}$ (c) $\frac{l}{32}$ (d) $\frac{l}{64}$
- 42. Let 'M' be the mass and 'L' be the length of a thin uniform rod. In first case, axis of rotation is passing through centre and perpendicular to the length of the rod. In second case axis of rotation is passing through one end and perpendicular to the length of the rod. The ratio of radius of gyration in first case to second case is
 - (a) 1 (b) $\frac{1}{2}$ (c) $\frac{1}{4}$ (d) $\frac{1}{8}$



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- 43. An object of radius R and mass M is rolling horizontally without slipping with speed v. It then rolls up the hill to a maximum height $h = 3v^2/4g$. The moment of inertia of the object is (where, g = acceleration due to gravity)

(a)
$$\frac{2}{5}MR^2$$
 (b) $\frac{MR^2}{2}$ (c) MR^2 (d) $\frac{3}{2}MR^2$

44. The moment of inertia of a thin uniform rod rotating about the perpendicular axis passing through one end is *l*. The same rod is bent into a ring and its moment of inertia about the diameter is l_1 . The ratio l/l_1 is

(a)
$$\frac{4\pi}{3}$$
 (b) $\frac{8\pi^2}{3}$ (c) $\frac{5\pi}{3}$ (d) $\frac{8\pi^2}{5}$

45. Three identical spheres each of mass 1 kg are placed touching one another with their centres in a straight line. Their centres are marked as A, B, C respectively. The distance of centre of mass of the system from A is

(a)
$$\frac{AB + AC}{2}$$
 (b) $\frac{AB + BC}{2}$ (c) $\frac{AC - AB}{3}$ (d) $\frac{AB + AC}{3}$

- 46. From Brewster's law, except for polished metallic surface, the polarising angle
 - (a) depends on wavelength and is different for different colours
 - (b) independent of wavelength and is different for different colours
 - (c) independent of wavelength and is same for different colours
 - (d) depends on wavelength and is same for different colours
- 47. For the same angle of incidence, the angles of ^fraction in media P, Q, R and S are 50°, 40°, 30° 20° respectively. The speed of light is minimum in medium
 (a) P
 (b) Q
 (c) R
 (d) S
- 48. Light is incident at an angle i on a glass slab. The reflected ray is completely polarised. The angle of refraction is
 - (a) $90^{\circ} i$ (b) $180^{\circ} i$ (c) $90^{\circ} + i$ (d) i
- 49. When an unpolarised light of intensity I_0 is incident on a polarising sheet, the intensity of the light which does not get transmitted is
 - (a) $\frac{1}{2}l_0$ (b) $\frac{1}{4}l_0$ (c) zero (d) I_0
- 50. Two wires having same length and material are stretched by same force. Their diameters are in the ratio 1 : 3. The ratio of strain energy per unit volume for these two wires (smaller to larger diameter) when stretched is
 (a) 3:1
 (b) 9:1
 (c) 27:1
 (d) 81:1





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ABHIMANYU BATCH CHEMISTRY : REVISION TEST 3 (SET B) Topics: Mole Concept, Redox Reaction, Periodic Properties, S Block, Hydrogen, Atomic Structure, Gaseous States and Chemical Equilibrium

				Space for R	lough Wo	rk		
	(a)	98.42 g	(b)	56.3	(c)	224.0	(d)	37.2
27.	establ	ished. If K_C for este	rfication	process is 4, mass	of ester pr	esent at equilibriur	n (in gm) i	IS
57.	2 mol	e each of CH₃OH &	& CH₃C	OOH are taken and	l heated in	the presence of c	on H ₂ SO ₄	so that equilibrium is
	(a)	NaHCO ₃	(b)	KHCO ₃	(c)	LiHCO ₃	(d)	All
56.	The al	kali metal bicarbon	ate that	has no existence in	solid state	is		
	(a)	Potassium	(b)	Beryllium	(c)	Strontium	(d)	Barium
55.	Super	oxide of type MO ₂ a	are form	ed by all except				
	(c)	solids < liquids >	gases		(d)	solids < liquids <	< gases	
	(a)	solids > liquids >	gases		(b)	solids > liquids <	< gases	
54.	Thern	nal energy order is						
	(a)	α - particle	(b)	positron	(c)	β - particle	(d)	neutron
53.	Tritiu	m emits						
	(a)	120.6	(b)	60.3	(c)	241.2	(d)	180.9
52.	The ic	nization potential o	of an elei	ment is 5.23 eV. Th	is can also	be expressed as	K.cals	/mole
	(c)	Acidic			(d)	Neutra		
	(a)	Amphoteric oxide	es		(b)	Basic		
51.	BeO,	Al_2O_3 , SnO_2 , SiO_2 ,	Sb_2O_3 , F	PbO are	_oxides			



58.	One m appear of hydr	nole of N ₂ H ₄ loses is in the new compo rogen)	10 mole ound, the	es of electrons to for e oxidationstate of nit	rm a nev rogen in	w compound 'X'. As X is (There is no cha	ssuming ange in 1	that all the nitrogen the oxidation number	
	(a)	-1	(b)	-3	(c)	+3	(d)	+5	
59.	CuSO	$_{1}$. 5H ₂ O is represent	ed as						
	(a)	$[Cu(H_2O)_5]SO_4$			(b)	[Cu(H ₂ O) ₃ SO ₄] . 2H	I ₂ O		
	(c)	[Cu(H ₂ O) ₄]SO ₄ . H	H_2O		(d)	All of these			
60.	A pott	er wishes to make a	deep blu	ue glaze. Which one o	of these a	available chemicals sl	hould be	mixed?	
	(a)	Cuprous oxide	(b)	Nickel oxide	(c)	Cobalt oxide	(d)	Iron oxide	
61.	Identif	y the incorrect state	ment reg	garding black body ra	diation.				
	(a)	As ' λ ' increases i	intensity	first increases and th	en decre	eases			
	(b)	The temperature T	$T_2 > T_1$						
	(c)	As temperature in	creases,	the λ corresponding	to maxi	mum intensity increas	ses		
	(d)	At maximum wav	elength,	intensity is minimum	1				
62.	The se	cond ionization pote	ential is						
	(a)	Less than the first	ionizati	on potential	(b)	Equal to the first ion	nization	potential	
	(c)	Greater than the fi	rst ioniz	ation potential	(d)	None of these			
63.	Equal amounts of two gases of molecular weight 4 and 40 are mixed. The pressure of the mixture is 1.1 atm. The partial pressure of the light gas in this mixture is								
	(a)	0.55 atm	(b)	0.11 atm	(c)	1 atm	(d)	0.12 atm	
64.	The th	ird virial coefficient	of a He	gas is 4×10^{-2} (lit/m	ol) ² , ther	n what will be volume	e of 2 mo	ole He gas at NTP?	
	(a)	22.0 lit	(b)	44.0 lit	(c)	44.8 lit	(d)	45.3 lit	



- 65. The useful bye-products, obtained in the Solvay process of manufacturing sodium carbonate are
 - (a) Quick lime and CO_2 (b) NaHCO₃ and NH₄Cl
 - (c) NH_4Cl solution and quick lime (d) $NaHCO_3$ and CO_2
- 66. Surface tension of water at 25° C is 7.2×10^{-2} Nm⁻¹. In order to increase surface area of water by 100 cm², the amount of work done will be
 - (a) 7.2×10^{-4} J (b) 7.2 J (c) 72 J (d) 0.72 J
- 67. The following facts are available

 $2X^- + Y_2 \rightarrow 2Y^- + X_2$

 $2W^- + Y_2 \rightarrow No$ reaction

$$2Z^- + X_2 \rightarrow 2X^- + Z_2$$

Which of the following statements is correct

(a)
$$E_{W^-/W_2}^0 > E_{Y^-/Y_2}^0 > E_{X^-/X_2}^0 > E_{Z^-/Z_2}^0$$
 (b) $E_{W^-/W_2}^0 < E_{Y^-/Y_2}^0 < E_{X^-/X_2}^0 < E_{Z^-/Z_2}^0$
(c) $E_{W^-/W_2}^0 < E_{Y^-/Y_2}^0 > E_{X^-/X_2}^0 > E_{Z^-/Z_2}^0$ (d) $E_{W^-/W_2}^0 > E_{Y^-/Y_2}^0 < E_{X^-/X_2}^0 < E_{Z^-/Z_2}^0$

68. Maximum density of heavy water is at

- (a) 0° C (b) 11.6° C (c) 4° C (d) 3.2° C
- 69. Which of the following alkaline earth metal nitrate does not have water of crystallisation?
 - (a) $Ca(NO_3)_2$ (b) $Mg(NO_3)_2$ (c) $Sr(NO_3)_2$ (d) $Ba(NO_3)_2$
- 70. 1 gram of a carbonate (M_2CO_3) ontreatment with excess HCl produces 0.01186 mole of CO₂. The molar mass of M_2CO_3 in g mol⁻¹ is

(a)	118.6	(b)	11.86	(c)	1186	(d)	84.3
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71. Which of the following is electron rich covalent hydride?

	(a)	KH	(b)	CH_4	(c)	NH ₃	(d)	TiH	
Space for Rough Work									



72.	Which	of the following sa	lt gives g	golden yellow colour	in flame	e test		
	(a)	KCl	(b)	LiCl	(c)	NaCl	(d)	CsCl
73.	The el	ectronic transition th	hat emits	s maximum energy is	[n = rep	presents orbit]		
	(a)	$n_5 \rightarrow n_4$	(b)	$n_4 \rightarrow n_3$	(c)	$n_2 \rightarrow n_1$	(d)	$n_3 \rightarrow n_2$
74.	If a she	ell is having 'g' subs	shell whi	ch is correct statemer	nt about	principal quantum n o	of this sh	ell
	(a)	$n \leq 5$			(b)	$n \ge 5$		
	(c)	n = 5			(d)	Cannot be determin	ed	
75.	5 g of	zinc is treated separ	ately wi	th an excess of				
	(a)	dilute hydrochlori	c acid ar	nd				
	(b)	aqueous sodium h	ydroxid	е.				
	The ra	tio of the volumes o	of H ₂ evo	olved in these two read	ctions is	:		
	(a)	1:4	(b)	1:2	(c)	2:1	(d)	1:1
76.	Which	of the following is	expected	d to have zero electro	n affinit <u>y</u>	y?		
	(a)	Oxygen	(b)	Fluorine	(c)	Nitrogen	(d)	Neon
77.	The re	action of aqueous K	MnO ₄ w	with H_2O_2 in acidic co	nditions	gives :		
	(a)	Mn^{4+} and O_2	(b)	Mn^{2+} and O_2	(c)	Mn^{2+} and O_3	(d)	Mn^{4+} and MnO_2
78.	81.4 g of sign	sample of ethyl alc	cohol con	ntains 0.002 g of wate	er. The a	amount of pure ethyl	alcohol	to the proper number
	(a)	81.398 g	(b)	71.40 g	(c)	91.4 g	(d)	81 g
79.	Sodiur	n peroxide which is	a yellov	w solid, when exposed	l to air b	ecomes whitedue to t	he form	ation of
	(a)	H_2O_2	(b)	Na ₂ O	(c)	Na ₂ O and O ₃	(d)	NaOH and Na ₂ CO ₃



80.	The p	beriod number in	the long fo	rm of the period	ic table is equ	al to			
	(a)	magnetic quar	ntum numb	er of any elemen	t of the perio	d			
	(b)	atomic numbe	er of any ele	ement of the peri	od				
	(c)	Principal quar	ntum numb	er of outer most	shell of any e	lement			
	(d)	maximum Azi	imuthal qua	antum number of	any element	of the period			
81.	0.24 substa	g of a volatile s ance is	substance 1	upon vaporisatio	on, gives 45	ml of vapour a	t STP. The	vapour density o	of the
	(a)	5.993	(b)	59.93	(c)	95.39	(d)	95.93	
82.	Whic	h one of the follo	owing comp	oounds is a perox	tide?				
	(a)	KO_2	(b)	BaO_2	(c)	MnO_2	(d)	NO_2	
83.	Of the	e four oxyacids o	of chlorine t	the strongest oxid	dising agent i	n dilute aqueous	solution is		
	(a)	HClO ₄	(b)	HClO ₃	(c)	HClO ₂	(d)	HOCl	
84.	In the	hardening stage	of plaster of	of paris, the com	pound formed	d is			
	(a)	CaSO ₄			(b)	Orthorhombio	c CaSO ₄ . 2H	₂ O	
	(c)	CaSO ₄ H ₂ O			(d)	Monoclinic C	aSO4 . 2H ₂ O		
85.	Be ²⁺ i	s isoelectronic w	vith which o	of the following i	ions?				
	(a)	Li ⁺	(b)	Na^+	(c)	Mg^{2+}	(d)	H^{+}	
86.	The n	umber of natural	lly occurrin	g p-block eleme	nts that are di	amagnetic			
	(a)	18	(b)	6	(c)	5	(d)	7	
87.	The e	quivalent weight	of Mohr's	salt, FeSO ₄ . (N	$H_4)_2 SO_4 . 6H_2$	₂ O is equal to			
	(a)	Its molecular	weight		(b)	Atomic weigh	nt		
	(c)	Half its molec	ular weight	t	(d)	One-third its	molecular we	ight.	



- 88. Larger number of oxidation states are exhibited by the actinoids than those bythe lanthanoids. This can be best explained as
 - (a) Lesser energy difference between 5f and 6d than between 4f and 5dorbitals
 - (b) More energy difference between 5f and 6d than between 4f and 5d orbitals
 - (c) More reactive nature of the actinoids than the lanthanoids
 - (d) 4f orbitals more diffused than the 5f orbitals
- 89. Which of the following reactions represents water gas shift reaction?

(a)
$$CO_{(g)} + H_2O_{(g)} \xrightarrow{673K} CO_2 + H_2$$

Iron chromate

(b)
$$C_{(s)} + H_2O_{(g)} \xrightarrow{12/0K} CO_{(g)} + H_2$$

(c)
$$CH_4 + H_2O_{(g)} \xrightarrow{1270K} CO_{(g)} + 3H_{2(g)}$$

- (d) None of these
- 90. If the electronegativity difference between bonded atoms is exactly 1.7 the nature of bond formed is
- (a) > 50% Ionic (b) <50% Ionic 50% Ionic & 50% covalent (d) 100% Ionic (c) 91. Lothar Meyer obtained the curve for the known elements by plotting theiratomic volumes against atomic numbers (b) atomic masses (c) densities (d) ionization energies (a) 92. How many number of pairs of elements exhibit diagonal relationship. 2 (b) 4 3 6 (a) (c) (d) 93. One litre of a gas weighs 2 g at 300 K and 1 atm pressure. If the pressure ismade 0.75 atm, at which of the following temperatures will one litre of the same gas weigh one gram 450 K 900 K (a) (b) 600 K 800 K (d) (c)



94.	When	an ideal gas undergoe	es unres	strain	ed expai	nsion, no	o cooling	g occurs because the molecules			
	(a)	Are above the inver	sion te	mpera	ature		(b)	Exert no attractive force on each other			
	(c)	Do work equal to lo	oss in k	inetic	energy		(d)	Collide without loss of energy			
95.	Chloro	phyll, the green com	ponent	of pla	ants cont	tains					
	(a)	Ca ²⁺	(b)	Be ²⁺	-		(c)	Mg^{2+}	(d)	Ba ²⁺	
96.	The po	larising ability of wh	ich one	of th	e follow	ving is th	ne highe	st			
	(a)	Small highly +ve io	n				(b)	Large +ve ion			
	(c)	Small highly -ve io	n				(d)	Large -ve ion			
97.	Electro	magnetic radiation w	vith ma	ximu	m wavel	ength is					
	(a)	Ultraviolet	(b)	Rad	io wave		(c)	X-ray	(d)	Infrared	
98.	On the of char	basis of data given b coal?	elow p	redict	t which o	of the fo	llowing	gases shows least ad	sorption	on a definite amount	
	Gas		CC	\mathbf{D}_2	SO_2	CH ₄	H ₂				
	Critic	al temperature (K)	30	4	630	190	33				
	(a)	CO_2	(b)	SO_2			(c)	CH ₄	(d)	H_2	
99.	A pair	of gases having same	enumb	er of a	molecul	es are					
	(a)	22 g of CO and 72 g	g of N				(b)	11 g of CO and 28 g	g of N		
	(c)	(c) 44 g of CO and 7 g of N					(d)	11 g of CO and 7 g	of N		
100.	Atomic	c radius of "Li" is 1.5	$2A^{\circ}$ and	d ion	ic radius	s of "Li+	" is 0.76	5A°. The % ofvolume	occupie	ed by 2s electron is	
	(a)	50%	(b)	79%)		(c)	66%	(d)	94%	



Max. Marks: 100

Date: 20.11.2022

ABHIMANYU BATCH PHYSICS : REVISION TEST-3 (SET B) r Motion + Cravitation + Waya Optics + P

Topic: Ray Optics + Circular Motion + Gravitation + Wave Optics + Rotational Motion + Elasticity

1.	(a)	2.	(d)	3.	(a)	4.	(a)	5.	(b)
6.	(a)	7.	(b)	8.	(c)	9.	(b)	10.	(a)
11.	(c)	12.	(d)	13.	(c)	14.	(b)	15.	(c)
16.	(d)	17.	(d)	18.	(b)	19.	(c)	20.	(c)
21.	(b)	22.	(d)	23.	(a)	24.	(d)	25.	(c)
26.	(b)	27.	(d)	28.	(b)	29.	(b)	30.	(b)
31.	(c)	32.	(c)	33.	(c)	34.	(b)	35.	(a)
36.	(a)	37.	(b)	38.	(d)	39.	(d)	40.	(b)
41.	(a)	42.	(b)	43.	(b)	44.	(b)	45.	(d)
46.	(a)	47.	(d)	48.	(a)	49.	(a)	50.	(b)

CHEMISTRY : REVISION TEST-3 (SET B) ANSWER KEY

Topics: Mole Concept, Redox Reaction, Periodic Properties, S Block, Hydrogen, Atomic Structure, Gaseous States and Chemical Equilibrium

51.	(a)	52.	(a)	53.	(c)	54.	(d)	55.	(b)
56.	(c)	57.	(a)	58.	(c)	59.	(c)	60.	(c)
61.	(c)	62.	(c)	63.	(c)	64.	(d)	65.	(c)
66.	(a)	67.	(a)	68.	(b)	69.	(d)	70.	(d)
71.	(c)	72.	(c)	73.	(c)	74.	(b)	75.	(d)
76.	(d)	77.	(b)	78.	(a)	79.	(d)	80.	(c)
81.	(b)	82.	(b)	83.	(d)	84.	(d)	85.	(a)
86.	(c)	87.	(a)	88.	(a)	89.	(a)	90.	(c)
91.	(b)	92.	(c)	93.	(a)	94.	(b)	95.	(c)
96.	(a)	97.	(b)	98.	(d)	99.	(d)	100.	(b)