



SCO 19, Second Floor, Sector 20–D, Chandigarh | Mob. : 9780887400, 9779778234

		SAMPLE PAPER	CLAS	is : XI	trigya
	(c)	$mgh = \frac{1}{2}k(x+h)^2$	(d)	$mg(h+x) = \frac{1}{2}k(x+x)$	$h)^2$
8.	A b inst	body of mass 1 kg is accelerated uniformly from antaneous power delivered to the body at time t	om res	t to a speed of 5 m/s t to a speed of 5 m/s t < 4 sec.)	in 4 sec. What is the
	(a)	$\frac{25}{16}t$	(b)	t	
	(c)	$\frac{16}{25}t$	(d)	$\frac{4}{5}t$	
9.	A p the	article travels 10 m in first 5 sec and 10 m in n distance travelled in next 2 sec.	ext 3	sec. Assuming consta	nt acceleration what is
	(a)	8.3 m	(b)	9.3 m	
	(c)	10.3 m	(d)	None of above	
10.	A p	particle moves along the curve $y = \frac{x^2}{2}$. Here x	x varie	is with time as $x = \frac{t^2}{2}$	$\frac{2}{2}$. Where x and y are
	mea	asured in metre and t in second. At $t = 2$ s, then	veloci	ty of the particle (in m	ns^{-1}) is :
	(a)	$2\hat{i}-4\hat{j}$	(b)	$2\hat{i} + 4\hat{j}$	
	(c)	$4\hat{i}+2\hat{j}$	(d)	$4\hat{i}-2\hat{j}$	
11.	Rai in t her (a)	n is falling vertically with a velocity of 25 ms ⁻¹ he north to south direction. What is the directi umbrella to safe herself from rain ? tan^{-1} (0.4)	. A we on (an (b)	oman rides a bicycle v gle with vertical) in tan ⁻¹ (1)	vith a speed of 10 ms ⁻¹ which she should hold
	(c)	$\tan^{-1}(\sqrt{3})$ Eduventure	(d)	$\tan^{-1}(2.6)$	
12.	An Wh on t	aeroplane is flying at a height of 1960 m in h en it is vertically above the point. A on the gro the ground, then the time taken by the bomb to r $20\sqrt{2}$ sec	norizon ound, i reach t	ntal direction with a st t drops a bomb. The l he ground is:	velocity of 360 km/hr. bomb strikes a point B
	(a)	$10\sqrt{2}$ see	(b) (d)	10 see	
13		ight string passing over a smooth light pull	(u) lev.co	nnects two blocks o	of masses my and ma
15.	(vei	rtically). If the acceleration of the system is $g/8$	then th	ne ratio of the masses	is
	(a)	8 : 1	(b)	9:7	
	(c)	4:3	(d)	5:3	
14.	The	potential energy of a particle at A, B, C, D and	d P are	$e U_A = 2 J, U_B = 5$	BC
	J, U	$U_C = 8 J$, $U_D = 5 J$ and $U_P = 5 J$. The conservative	e force	e on the particle at	
	poi	nt P is		0	.2m P Q
	(a)	10 N along PQ (b	o) 15-	$\sqrt{2}$ N along PA	
	(c)	5 N along PC (d	d) 5 N	along PA	6.2m

t	rigya nure	SAMPLE PAPER	CLASS : XI			
15.	5. For a projectile, the ratio of maximum height reached to the square of flight time is $(g = 10 \text{ ms}^{-2})$					
	(a) 5:4	(b)	5:2			
	(c) 5:1	(d)	10:1			
16.	A mass of 10 on the rope at mass is at equi	kg is suspended vertically by a rope from some point, the rope deviated at an angle ilibrium, the magnitude of the force applied	the roof. When a horizontal force is applied e of 45° at the roof point. If the suspended l is $(g = 10 \text{ ms}^{-2})$			
	(a) 200 N	(b)	100 N			
	(c) 140 N	(d)	70 N			
17.	A uniform cha edge of the ta chain on the ta	tin of length 2 m is kept on a table such the ble. The total mass of the chain is 4 kg. V able ?	hat a length of 60 cm hangs freely from the What is the work done in pulling the entire			
	(a) 7.2 J	(b)	3.6 J			
	(c) 120 J	(d)	1200 J			
18.	A block of ma	ass m is placed on a rough fixed sphere. T	The coefficient of static friction between the			
	sphere and th	en block is $\mu_s = \frac{1}{\sqrt{3}}$. Find the maximum	m value of θ , so that the block remains			
	stationary.					
		Eduventure				
	(a) 30°	(b)	45°			
	(c) 60°	(d)	90°			
19.	A block A of	mass 1 kg in projected along rough hor	izontal surface			
	from $x = 0$ w	ith speed $v_0 = \sqrt{10}$ m/s. Find the distance	ce travelled by A			
	block before c block and the	coming to rest. The coefficient of kinetic fr surface is $\mu = bx$, where $b = 1 \text{ m}^{-1}$.	$\frac{1}{\mathbf{x} = 0}$			
	(a) 1 m	(b)	2 m			
	(c) 3 m	(d)	4 m			
20.	A block of ma the block and vertical which	ass 50 kg can slide on a rough horizontal at the surface is 0.6. The least force of pull ac causes the block to just slide is	surface. The coefficient of friction between ting at an angle of 30° to the upward drawn			
	(a) 29.43 N	(b)	219.6 N			
	(c) 21.96 N	(d)	294.3 N			

4

SAMPLE PAPER

CLASS: XI

- trigya
- 21. A block of mass m = 2 kg is placed on a plank of mass M = 10 kg which is placed on a smooth horizontal plane, as shown in the figure. The coefficient of friction between the block and the plank is $\mu = \frac{1}{3}$. If the horizontal force F is applied on the plank, then the maximum value of F for which the block and the plank move together is (g = 10 m/s²)



- 22. Three coplanar forces act upon a mass of 5 kg. With the usual notion the forces, in newton's, are $9\hat{i}-2\hat{j}, -3\hat{i}+10\hat{j}$ and $18\hat{i}-\hat{j}$ then the acceleration of the mass is (in m/s²):
- 23. Power supplied to a particle of mass 2 kg varies with time as $P = \frac{3t^2}{2}W$, where t is in seconds. If the velocity of the particle at t = 0 is v = 0, then what is the velocity (in m s⁻¹) of the particle at t = 2s ?
- 24. A force F is applied on a block of mass $\sqrt{3}$ kg which rests on a horizontal surface with a coefficient of friction $\frac{1}{2\sqrt{3}}$. The maximum value of F for which the block doesn't move, is [Take g = 10 ms⁻²]



25. A particle of mass 2 kg is initially at rest. A force acts on it whose magnitude changes with time. The force time graph is shown below.



The velocity (in m/s) of the particle after 10 s is :

1	4	(^) -			
J	r	I g	U	a	
duva	ontura	\sim			

SAMPLE PAPER

CLASS : XI

CHEMISTRY

- 26. The compressibility factor for a real gas at high pressure is :
 - (a) 1 (b) $1 + \frac{Pb}{RT}$

(c)
$$1 - \frac{Rb}{RT}$$
 (d) $1 + \frac{RT}{Rt}$

27. Which among the following pairs contain both paramagnetic species :

- (a) O_2^{2-} and N_2^{-} (b) O_2^{-} and N_2
- (c) O_2 and N_2 (d) O_2 and N_2^-

28. Given below are two statements : one labelled as Assertion A and the other is labelled as Reason R.Assertion A : Dipole-dipole interactions are the only non-covalent interactions, resulting in hydrogen bond formation.

Reason R : Fluorine is the most electronegative element and hydrogen bonds in HF are symmetrical. In the light of the above statements, choose the most appropriate answer from the options given below :

- (a) A is false but R is true
- (b) Both A and R are true and R is the correct explanation of A
- (c) A is true but R is false
- (d) Both A and R are true but R is NOT the correct explanation of A
- **29.** A 200 g cricket ball is thrown with a speed of 3.0×10^3 cm sec⁻¹. What will be its de Broglie's wavelength? [h = 6.6×10^{-27} g cm² sec⁻¹]
 - (a) 1.1×10^{-32} cm (b) 2.2×10^{-32} cm
 - (c) 0.55×10^{-32} cm (d) 11.0×10^{-32} cm
- **30.** Hot concentrated sulphuric acid is a moderately strong oxidising agent. Which of the following reactions does not show oxidising behaviour ?
 - (a) $Cu + 2H_2SO_4 \rightarrow CuSO_4 + SO_2 + 2H_2O$ (b) $S + H_2SO_4 \rightarrow 3SO_2 + 2H_2O$
 - (c) $C + 2H_2SO_4 \rightarrow CO_2 + 2SO_2 + 2H_2O$ (d) $CaF_2 + H_2SO_4 \rightarrow CaSO_4 + 2HF$

- (a) $Na_2CO_3 + NaOH$ (b) $NaHCO_3 + Na_2CO_3$
- (c) $NaHCO_3 + NaOH$ (d) NaOH + NaCl

32. Total number of molecules which can form H–bond among themselves.

SiH₃OH, HCN, B(OMe)₃, NHMe₂, CH₃CONH₂, HCHO, HCOOH, NH₂OH, H₄SiO₄

- (a) 2 (b) 5
- (c) 4 (d) 7

^{31.} Which of the following pairs of substances cannot exist together is solution ?

			CLAS	5 : XI	LPISYA Eduventure	
33.	The corre	ect statement among the following is :				
	(a) $(SiH_3)_3N$ is pyramidal and more basic than $(CH_3)_3N$					
	(b) (SiH ₂	$_{3})_{3}N$ is planar and more basic than (CH ₃) ₃ N				
	(c) (SiHz	$_{3})_{3}N$ is pyramidal and less basic than (CH ₃)	₃ N			
	(d) (SiH_3)	$_{3})_{3}N$ is planar and less basic than $(CH_{3})_{3}N$				
34.	Which co	ompound cannot be used as Reducing agent	_			
	(a) CO ₂		(b)	HNO ₂		
	(c) H ₃ PC	D_3	(d)	H_2SO_3		
35.	The absol	lute value of the electron gain enthalpy of h	aloge	ens satisfies :		
	(a) $I > B$	Br > Cl > F	(b)	Cl > Br > F > I		
	(c) Cl>	F > Br > I	(d)	F > Cl > Br > I		
36.	Ratio of s	slopes of 'KE _{max} ' v/s ' ν ' and 'V_0' vs ' ν ' c	urves	in photoelectric effect give	es :	
	(v is freq)	quency of incident radiation & V_0 is stopping	ig po	tential)		
	(a) charg	ge of electron (e)	(b)	Planck's constant (h)		
	(c) Worl	k function (w)	(d)	$\frac{h}{e}$		
37.	Which of	the following compounds has minimum vo	olatili	ty?		
	(a) C_6H_6		(b)	CCl ₄		
	(c) H_2SC		(d)	HF		
38.	Consider	the following statements :				
	a. Kine	tic energy of a molecule is zero at 0°C				
	b. A ga the to	s in a closed container will exert much hig	her p	pressure due to gravity at th	e bottom than at	
	c. Betw	veen collisions, the molecules move in strai	ght li	nes with constant velocities	.	
	Choose th	he incorrect statement(s)				
	(a) a, b &	& с	(b)	a & b		
	(c) b & c	2	(d)	a & c		
39.	Consider enthalpy	the elements Mg, Al, S, P and Si, the o	correc	ct increasing order of their	r first ionization	
	(a) Mg <	< Al $<$ Si $<$ S $<$ P	(b)	Al < Mg < Si < S < P		
	(c) Mg <	< Al < Si < P < S	(d)	Al < Mg < S < Si < P		
40.	500 ml or vapour, a	f a hydrocarbon gas burnt in excess of oxy ll volumes being measured at the same tem	gen, perat	yields 2500 ml of CO_2 and ure and pressure. The hydro	3 litres of water ocarbon is :	
	(a) C_5H_1	0	(b)	C_5H_8		
	(c) C_5H_1	2	(d)	C_5H_6		

SAMPLE PAPER CLASS : XI 41. The van der Waals' equation of law of corresponding states for 1 mole of gas is (a) $\left(P_r + \frac{3}{V_r^2}\right)(3V_r - 1) = 8T_r$ (b) $\left(P_r - \frac{3}{V_r^2}\right)(3V_r - 1) = 8T_r$ (d) $\left(P_r + \frac{3}{V^2}\right)(3V_r + 1) = 8$ (c) $\left(P_r + \frac{3}{V^2}\right)(3V_r + 1) = 8\pi T_r$ 42. The frequency of radiations emitted when electron falls from n = 4 to n = 1 in H atom would be (a) $1.54 \times 10^{15} \text{ s}^{-1}$ (b) $1.03 \times 10^{15} \text{ s}^{-1}$ (c) $3.08 \times 10^{15} \text{ s}^{-1}$ (d) $2.0 \times 10^{15} \text{ s}^{-1}$ **43.** The electron affinities of F, Cl, Br and I are 330, 349 and 295 kJ mol⁻¹ respectively. The higher value for Cl as compared to that of F is due to (a) Weaker electron–electron repulsion in Cl (b) Higher atomic radius of F (c) Smaller electronegativity of F (d) More vacant p-subshell in Cl 44. A certain orbital has no angular nodes and two radial nodes. The orbital is : (a) 2s (b) 3s (d) 2p (c) 3p 45. The ionization potential for the electron in the ground state of the hydrogen atom is 13.6 eV atom⁻¹. What would be the ionization potential for the electron in the first excited state of Li^{2+} ? (b) 10.2 eV (a) 3.4 eV (d) 6.8 eV (c) 30.6 eV 46. A bulb was heated from 27°C to 227°C at constant pressure. Calculate the volume (in ml) of bulb if 200 ml of air measured at 27°C was expelled during process -47. V₁ Litre of 0.2 M NaOH (in ml) solution should be mixed to 500 ml of 0.5 M NaOH solution so that 300 ml of final solution is completely neutralised by 20 ml of 2 M H₃PO₄ solution. [Assuming 100% dissociation] Find $8 \times V_1$.

- 48. The number of moles of water present in 180 gm of water is
- **49.** Consider the compound given below $H_2C = CH - CH = CH - CH_2 - OH$ The number of sp² hybridised atoms is
- 50. On complete combustion 0.30 g of an organic compound gave 0.20 g of carbon dioxide and 0.10 g of water. The percentage of carbon in the given organic compound is ______ (Nearest Integer)

	SAMPLE PAPER	CLAS	is : XI	trigga Eduventure
	MATHEMA	TICS		
51.	If $\tan\left(\frac{\pi}{4} + \frac{y}{2}\right) = \tan^3\left(\frac{\pi}{4} + \frac{x}{2}\right)$, then $\sin x\left(\frac{3 + \sin^2 x}{1 + 3\sin^2 x}\right)$	$\left(\frac{x}{x}\right) e^{\frac{x}{x}}$	quals	
	(a) cos y	(b)	sin y	
	(c) sin 2y	(d)	0	
52.	The value of $\sin^3 10^0 + \sin^3 50^0 - \sin^3 70^0$ is equal to			
	(a) $-\frac{3}{2}$	(b)	$\frac{3}{4}$	
	(c) $-\frac{3}{4}$	(d)	$-\frac{3}{8}$	
53.	Range of $f(x) = \sin^6 x + \cos^6 x$ is			
	(a) [0, 1]	(b)	$[0,\sqrt{2}]$	
	(c) $\left[\frac{1}{\sqrt{2}}, \frac{3}{4}\right]$	(d)	$\left[\frac{1}{4},1\right]$	
54.	If 2 $\tan^2 x - 5 \sec x = 1$ for exactly 7 distinct values	of x	$\in \left[0, \frac{n\pi}{2}\right], n \in N$ then	n the greatest value of
	n is			
	(a) 13	(b)	17	
	(c) 19	(d)	15	
55.	The number of solutions of the pair of equation interval $[0, 2\pi]$ is <i>OUVENTUVE</i>	ns 2 s	$\sin^2\theta - \cos 2\theta = 0, 2\cos^2\theta$	$^{2}\theta - 3\sin\theta = 0$ in the
	(a) 0 (b) 1	(c)	2 (d)	4
56.	A $(1, 2)$ and B $(5, 5)$ are two points. Starting from rightwards or upwards only, in each step, until B is A and B in this manner is	A, lii reach	ne segments of unit lea ed. Then, the number of	ngth are drawn either of ways of connecting
	(a) 35	(b)	40	
	(c) 45	(d)	50	
57.	The number of three digit numbers of the form x y z	zsuch	that $x < y$ and $z \le y$ is	5
	(a) 276	(b)	285	
	(c) 240	(d)	244	
58.	There are 10 stations on a circular path. A train has adjacent. The number of such selections must be	to sto	op at 3 stations such th	at no two stations are
	(a) 50	(b)	84	
	(c) 126	(d)	None of these	
59.	Total number of integers 'n' such that $2 \le n \le 2000$	and	H.C.F of 'n' and 36 is	one, is equal to
	(a) 666	(b)	667	
	(c) 665	(d)	668	
	SCO 19, Second Floor, Sector 20–D, Chandig	garh	Mob. : 9780887400, 97	79778234 9

Eduve		हुपुर्व	SAMPLE PAPER		CLASS :	XI
60.	60. The number of ways of forming an arrangement of 5 letters from the letters of the word "IITJEE" is					
	(a)	60	(b) 96	(c)	120	(d) 180
61.	If 7	divides 3	$2^{32^{32}}$, the remainder is			
	(a)	1	(b) 0	(c)	4	(d) 6
62.	The	e coefficie	nt of the term independent of x in the ex	apan	sion of $\left(\frac{x+1}{x^{2/3}-x^{1/3}+1}\right)$	$-\frac{x-1}{x-x^{1/2}}\Big)^{10}$
	(a)	70		(b)	112	
	(c)	105		(d)	210	
63.	Coe	efficient of	f x ⁶ in $((1+x)(1+x^2)^2(1+x^3)^3(1+x^2)^2)$	$(\mathbf{x}^n)^n$) is	
	(a)	26		(b)	28	
	(c)	30		(d)	35	
64.	If 1	, $\log_{81}(3^x)$	+48), $\log_9\left(3^x - \frac{8}{3}\right)$ are in A.P., then the	e va	lue of x equals	
	(a)	9	(b) 6	(c)	2	(d) 4
65.	If S	$S_n = \sum_{r=1}^n t_r =$	$=\frac{1}{6}n\left(2n^2+9n+13\right), \text{ then } \sum_{r=1}^n \sqrt{t_r} \text{ equal}$	s		
	(a)	$\frac{1}{2}n(n+1)$		(b)	$\frac{1}{2}n(n+2)$	
	(c)	$\frac{1}{2}n(n+3)$		(d)	$\frac{1}{2}n(n+5)$	
66.	If a b :	, b, c are t c are in	hree distinct numbers such that a, b, c a	re ir	A.P. and $b - a, c - b$	o, a are in G.P., then a :
	(a)	2:3:4		(b)	3:4:5	
	(c)	1:3:5		(d)	1:2:3	
67.	Giv	en that lo	$g_{10}^5 = 0.70$ and $\log_{10}^3 = 0.48$ then the val	ue o	f \log_{30}^{8} (correct upto 2)	2 places of decimal) is
	(a)	0.56		(b)	0.61	
	(c)	0.68		(d)	0.73	
68.	Giv	en that lo	$g_{10}^5 = 0.70$ and $\log_{10}^3 = 0.48$ then the val	ue o	f \log_{30}^{8} (correct upto 2)	2 places of decimal) is
	(a)	0.56		(b)	0.61	
	(c)	0.68		(d)	0.73	
69.	In a new 4% exa	a town of vs paper B buy A ar actly one of	10,000 families it was found that 40%, , and 10% families buy news paper C. And C, and 2% buy all the three news p f A, B, C is	o fan Also Dapei	nilies buy news paper 5% families buy A ar rs. Then the number	r A, 20% families buy nd B, 3% buy B and C, of families which buy
	(a)	4800		(b)	5200	
	(c)	5400		(d)	6400	
		SCO	19, Second Floor, Sector 20–D, Chandig	arh	Mob. : 9780887400, 9	779778234 10

	SAMPLE PAPER	CLASS : XI	trigua
70.	Let A, B are two sets such that $n(A) = 4$ the power set of $(A \cup B)$ is	and $n(B) = 6$. Then the least positive for $n(B) = 6$.	ssible number of elements in
	(a) 16	(b) 64	
	(c) 256	(d) 1024	
71.	The value of $\sqrt{3} \csc 20^{\circ} - \sec 20^{\circ}$ is		
72.	If the sum of the n terms of the series	s $1^3 + 3.2^2 + 3^3 + 3.4^2 + 5^3 + 3.6^2$	2 +, where n is an even
	number, is given by $\frac{n}{k}(n^3 + an^2 + bn + c)$	then $b-a+c-k$ is	
73.	Let 'k' be sum of all 'x' in the interval [$\frac{k}{\pi}$ is	$(0, 2\pi]$ such that $3 \cot^2 x + 8 \cot^2 x$	x + 3 = 0. Then the value of
74.	The exponent of 7 in ${}^{100}C_{50}$ is :	\$ % }	
75.	The sum of the series 3. ²⁰⁰⁷ C ₀ – 8. ²⁰⁰⁷ C ₁ + Eduventure	$+13^{2007}C_2 - 18.^{2007}C_3 + \dots$ upto 2	2008 terms is K, then K is

trigya		SAMPLE PAPER	CLASS :)	(1
ANSWER KEY				
		PHYSICS		
1. (c)	6. (b)	11. (a)	16. (b)	21. (40)
2. (d)	7. (b)	12. (b)	17. (b)	22. (5)
3. (c)	8. (a)	13. (b)	18. (a)	23. (2)
4. (b)	9. (a)	14. (b)	19. (a)	24. (20)
5. (b)	10. (b)	15. (a)	20. (d)	25. (50)
		<u>CHEMISTRY</u>		
26. (b)	31. (c)	36. (a)	41. (a)	46. (500)
27. (d)	32. (d)	37. (c)	42. (c)	47. (2)
28. (a)	33. (d)	38. (b)	43. (a)	48. (10)
29. (a)	34. (a)	39. (b)	44. (b)	49. (4)
30. (d)	35. (c)	40. (c)	45. (c)	50. (18)
	U		ya	
	Eduvent			
51. (b)	56. (a)	61. (c)	66. (d)	71. (4)
52. (d)	57. (a)	62. (d)	67. (b)	72. (6)
53. (d)	58. (a)	63. (b)	68. (b)	73. (5)
54. (d)	59. (a)	64. (c)	69. (b)	74. (0)
55. (c)	60. (d)	65. (c)	70. (b)	75. (0)
		I	·	I