<b>R.E.D. Group of Schools</b> Entrance Test – Session (2017–18)					
1.	4.9 g of sul pH of the s	phuric acid is presnet in olution?	500mL of the solu	ution. Calculate the	
2.	State Char	le's law with the help of	graph.		
3.	Write quan a) 2p:	ntum no. of electrons pre x	esent in orbitals : b) $3dz^2$		
4.	State and e	xplain hund's rule of max	ximum multiplicity.		
5.	What is sha VSEPR the	ape and hybridization of eory.	fPCl <sub>5</sub> and BF <sub>3</sub> mol	lecule according to	
6.	The follow from N <sub>2</sub> and $[N_2] = 1.5$ Calculate e	ving concentrations we ad H <sub>2</sub> at equilibrium at 5 $\times 10^{-2}$ M, [H <sub>2</sub> ] = 3.0 equilibrium constant.	the obtained for the 00 K $\times 10^{-2}$ M, and [N]	e formation of $NH_3$ $H_3$ ] = 1.2 × 10 <sup>-2</sup> M	
7.	What is Inc	ductive effect. Write its	types.		
8.	Calculate t $H_2$ Given that 192, 364, 1	he enthalpy change for t (g) + Br <sub>2</sub> (g) $\rightarrow$ 2 HBr(g the bond enthalpies of kJ mol <sup>-1</sup> respectively.	he reaction g) H—H, Br—Br ar	nd H—Br are 435,	
9.	What are L	lewis acids and Lewis b	ases. Give one exa	mple of each type?	
10.	What are r	eversible and irreversib	le reactions?	(10×2=20)	

## **R.E.D.** Group of Schools Entrance Test – Session (2017–18) Class : XII Subject - Chemistry Time :30 Min. M.M. 20 4.9 g of sulphuric acid is presnet in 500mL of the solution. Calculate the 1. pH of the solution? 2. State Charle's law with the help of graph. 3. Write quantum no. of electrons present in orbitals : a) 2px b) $3dz^2$ State and explain hund's rule of maximum multiplicity. 4. 5. What is shape and hybridization of PCl<sub>5</sub> and BF<sub>3</sub> molecule according to VSEPR theory. The following concentrations were obtained for the formation of NH, 6. from $N_2$ and $H_2$ at equilibrium at 500 K $[N_2] = 1.5 \times 10^{-2} \text{ M}, \quad [H_2] = 3.0 \times 10^{-2} \text{ M}, \text{ and } [NH_2] = 1.2 \times 10^{-2} \text{ M}$ Calculate equilibrium constant. 7. What is Inductive effect. Write its types. 8. Calculate the enthalpy change for the reaction $H_2(g) + Br_2(g) \rightarrow 2 HBr(g)$ Given that the bond enthalpies of H—H, Br—Br and H—Br are 435, 192, 364, kJ mol<sup>-1</sup> respectively. What are Lewis acids and Lewis bases. Give one example of each type? 9. What are reversible and irreversible reactions? 10. $(10 \times 2 = 20)$

<b>R.E.D. Group of Schools</b> Entrance Test – Session (2017-18)							
Time :30 Student	) Min. Name	Subject -	Biolog Roll N	IJ IJ No	M.M. 20 Sec		
1.	Separa	ate Xyleum and phloem	bundle	s are known as:	1×3=3		
	(a)	Radial	(b)	Amphivasal			
	(c)	Collateral	(d)	Bicollateral			
2.	Impor	tant site for formation o	fglycop	orotein and glycolipids is			
	(a)	Vacuole	(b)	Plastids			
	(c)	Lysosome	(d)	Golgi Apparatus			
3.	Phytoo						
	(a)	Buttl	(b)	R. Hill			
	(c)	Borthwick	(d)	Went			
4.	Distinguish between vessels and sieve tubes. $2 \times 4 = 8$						
5.	List th	ree main differences be	tween [	ONA and RNA.			
6.	How ear helps in maintaining equilibrium?						
7.	What is water potential? Why is it negative in value.						
8.	Discuss development of seed habit. $3 \times 3 = 9$						
9.	What are lipid? Give their types?						
10	What i	is peristalsis? How does	s it help	in digestion.			

<b>R.E.D.</b> Group of Schools							
Time : Studen	30 Min. nt Name_	Cla Cla Subject -	rss : (X Biolog Roll N	II) IV Vo	M.M. 20 Sec		
1.	Separa	Separate Xyleum and phloem bundles are known as:					
	(a)	Radial	(b)	Amphivasal			
	(c)	Collateral	(d)	Bicollateral			
2.	Impor						
	(a)	Vacuole	(b)	Plastids			
	(c)	Lysosome	(d)	Golgi Apparatus			
3.	Phytoe						
	(a)	Buttl	(b)	R. Hill			
	(c)	Borthwick	(d)	Went			
4.	Disting	tubes.	2×4=8				
5.	List th	ree main differences b	between D	ONA and RNA.			
6.	How ear helps in maintaining equilibrium?						
7.	What is water potential? Why is it negative in value.						
8.	Discuss development of seed habit. 3						
9.	What a						
10.	What	is peristalsis? How do	es it help i	n digestion.			

	<b>R.E.D. Group of School</b> Entrance Test-(Session-2017-18)	<b>S</b>
Time	Class : XII 30 Min. Subject - Mathematics	М.М. 20
1.	Find the derivative of the function $f(x) = \sec \sqrt{x}$ by using fir	est principle
2.	Evaluate: $Lt_{x \to \frac{\pi}{4}} \frac{tan^3 x - tan x}{cos(x + \frac{\pi}{4})}$	
3.	Find the equation of the hyperbola whose directrix is $2x + y$ and eccentricity $\sqrt{3}$ ?	=1, focus (1,2)
4.	The sum of an infinite number of terms in G.P. is 57 and sum 9747. Find the G.P. ?	of their lubes is
5.	Find the co-ordinates of the foot of perpendicular from the perpend	oint (2,3) on the
6.	If A and B be two sets containing 3 and 8 element respective minimum and maximum number of elements in $A \cup B$ ?	ely, then find the
7.	Find the domain and range of function $\sqrt{x^2-9}$	
8.	Prove that $2\sin^2\beta + 4\cos(\alpha + \beta)\sin\alpha\sin\beta + \cos 2(\alpha + \beta)$	$e^{2} = \cos 2\alpha$
9.	Solve: $4x^4 - 4x^3 - 7x^2 - 4x + 4 = 0$	
10.	A polygon has 44 diagonals. Find the number of its sides ?	(10×2=20)
	(1)	

## **R.E.D.** Group of Schools

Entrance Test-(Session-2017-18) Class : XII

Time : 30 Min.

Subject - Mathematics

M.M. 20

1. Find the derivative of the function  $f(x) = \sec \sqrt{x}$  by using first principle

2. Evaluate: 
$$Lt_{x \to \frac{\pi}{4}} \frac{\tan^3 x - \tan x}{\cos(x + \frac{\pi}{4})}$$

- 3. Find the equation of the hyperbola whose directrix is 2x + y = 1, focus (1,2) and eccentricity  $\sqrt{3}$ ?
- 4. The sum of an infinite number of terms in G.P. is 57 and sum of their lubes is 9747. Find the G.P. ?
- 5. Find the co-ordinates of the foot of perpendicular from the point (2,3) on the straight line. 4x - 5y + 8 = 0
- 6. If A and B be two sets containing 3 and 8 element respectively, then find the minimum and maximum number of elements in  $A \cup B$ ?
- 7. Find the domain and range of function  $\sqrt{x^2 9}$
- 8. Prove that  $2\sin^2\beta + 4\cos(\alpha + \beta)\sin\alpha\sin\beta + \cos 2(\alpha + \beta) = \cos 2\alpha$
- 9. Solve:  $4x^4 4x^3 7x^2 4x + 4 = 0$
- 10. A polygon has 44 diagonals. Find the number of its sides ?

 $(10 \times 2 = 20)$ 

<b>R.E.D. Group of Schools</b> Entrance Test–Session : 2017-18			<b>R.E.D.</b> Group of Schools			
					Entrance Test–Session : 2017-1	<b>!8</b>
	Class : XII				Class : XII	
Time :3	0 Min. Subject - Physics	<i>M.M. 20</i>	Time :	:30 Min.	Subject - Physics	<i>M.M. 20</i>
<i>(i)</i> .	All questions are necessary		<i>(i)</i> .	All quest	tions are necessary	
<i>(ii)</i> .	Every questions are 2 marks		<i>(ii)</i> .	Every qu	uestions are 2 marks	
1.	The displacement x of the body in motion is given b	$y x = A \sin(\omega t + \theta).$	1.	The displ	acement x of the body in motion is given by	$y \ x = A \sin(\omega t + \theta).$
	Determine the time at which the displacement is max	kimum.		Determin	he the time at which the displacement is max	timum.
2.	Prove that there are two timings for which the proje	ctile travels the same	2.	Prove that	at there are two timings for which the project	ctile travels the same
	vertical distance. Also prove that the sum of the two t	imings is equal to the		vertical di	istance. Also prove that the sum of the two the	imings is equal to the
	time of flight.			time of flig	ght.	0.1
3.	How does banking of roads reduce wear and tear of	of the tyres?	3.	How doe	es banking of roads reduce wear and tear o	of the tyres?
4.	A bird is sitting on the floor of a closed glass cage a	and the cage is in the	4.	A bird is	sitting on the floor of a closed glass cage a	ind the cage is in the
	nands of a girl. Will the girl experience any change	in the weight of the		hands of	a girl. Will the girl experience any change	in the weight of the
	cage when the bird $(l)$ starts flying in the cage with $(l)$	constant velocity $(ll)$		cage whe	in the bird $(i)$ starts hying in the cage with c	constant velocity $(ll)$
5	In the supwards with acceleration $(m)$ mes downwards If stratch in a spring of force constant K is downlad	s with acceleration?	5	If at rate h	and with acceleration $(m)$ lifes downwards	3 with acceleration?
3.	(a) ratio of final to initial force in the spring	calculate	5.	(a)	in a spring of force constant A is doubled,	calculate
	(a) ratio of initial to initial force in the spring (b) ratio of closestic energies stored in the two e	0505		$(a)$ $(b)$ $rac{1}{a}$	atio of initial to initial force in the spring	0000
	(c) work done in changing to the state of doubl	ases		(0) 10	work done in changing to the state of double	ascs estretch
6	A sphere of mass <i>m</i> moving with velocity <i>u</i> bits anot	bor stationary sphere	6	(c) where	of mass <i>m</i> moving with velocity <i>u</i> hits anoth	= suciuli. har stationary sphara
0.	of same mass. If a is coefficient restitution what is the	a ratio of velocities of	0.	A splicit	of mass $m$ moving with velocity $u$ mis about pass. If $a$ is coefficient restitution, what is the	ratio of valocities of
1	two spheres after collision?			two sphere	res after collision?	
7	A person sitting in an artificial satellite of earth fe	als weightless but a	7	A person	sitting in an artificial satellite of earth fee	ale maightlace but a
/.	A person standing on moon has weight through moo	n is also a satellite of	1.	nerson st	anding on moon has weight through moor	n is also a satellite of
	earth	i is also a satellite of		personsi	and ing on moon has weight through moor	1 is also a satellite of
8	A refrigerator is to maintain estables kent inside	at 15°C when room	8	A refrige	rator is to maintain estables kent inside a	at 15°C when room
0.	temperature is 25°C. Calculate the coefficient of pe	rformance	0.	temnerat	ure is $25^{\circ}$ C. Calculate the coefficient of per	rformance
9	The absolute temperature of a gas is made 4 times F	How are rms velocity	9	The abso	lute temperature of a gas is made 4 times. H	low are rms velocity
7.	of its molecules pressure of gas and K E of gas at	fected?		ofitsmol	lecules · pressure of gas and K E of gas af	fected?
10	Calculate mean free path of air molecules when num	ber of molecules per	10	Calculate	mean free path of air molecules when num	ber of molecules per
	cm <sup>3</sup> is $3 \times 10^{19}$ and diameter of each molecule is $2 \times$	10 <sup>-8</sup> cm.	10.	$cm^3$ is $3 \times$	$10^{19}$ and diameter of each molecule is $2 \times 1$	$10^{-8}$ cm.
		$(10 \times 2 = 20)$				(10×2=20)