2004A

SCHEME OF VALUATION

(Scoring Indicators)

Revision 2015 **Course Code:** 2004

Course Title: ENGINEERING CHEMISTRY II

Qst.Nos.	Scoring Indicator	Split up Score	Sub Total	Total
I	Part A			
1)	Azimuthal quantum number 'l' describes the shape of the orbital that an electron occupies. It also gives an idea about the subshells present in a principal shell.		2	
2)	Fuel cells are used as energy source in space vehicles, submarines, military vehicles and in automobiles.		2	
3)	Phenol and formaldehyde.		2	
4)	Ozonosphere is situated in the lower region of stratosphere that is 10 to 50 km above earth.		2	
5)	Corrosion is the gradual destruction of materials by chemical or electrochemical reaction with their environment		2	(5×2 = 10)

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Revision (15) **Course Code:** 2004

Course Title: ENGINEERING CHEMISTRY - II

Qst.Nos.	Scoring Indicator	Split up Score	Sub Total	Total
II				
1.(a)	Four postulates of Bohr model of atom	1+1+1+1	4	6
(b)	Electronic configuration of Na is $1s^2\ 2s^2\ 2p^6\ 3s^1$. Electron with highest energy in sodium atom is $3s^1$ $n=3$ $l=0$ $m=0$ $s=+1/2$		2	
2(a)	Fuel cell - defenition (2) Two advantages of fuel cell (1+1)	2+1+1	4	6
(b)	Salt water is a very good conductor than ordinary water It accelerates the rusting process as electrons move more easily in salt water than in pure water.		2	
3(a)	monomers of polythene → ethylene teflon → tetrafluoroethylene	1+1	4.	
	Use of polythene - packaging material, as insulation of electric wires	1		
	Use of teflon — making non-stick utensils, valves.	1		

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Qst.Nos.	Scoring Indicator	Split up Score	Sub Total	Total
3(b)	Catenation – defenition		2.	6
4(a)	Any 2 causes of air pollution.	1+1	4	
	Two air pollutants – CO, SO_2	1+1		
(b)	Two advantages of catalytic cracking	1+1	2	6
5(a)	Formation of covalent bonds,	2+	4	
	Two examples	1+1		
(b)	Defenition of orbital	2	2	6
6(a)	Four measures used to minimise air pollution	1+1+1+1	4	
(b)	Amide $-CONH_2$, ester $-COOR'$	1+1	2	6
7(a)	Defenition of galvanic cell, Primary Cell, Secondary Cell, Fuel Cell	(1+ 1+1+1)	4	
(b)	Any 4 factors which favour rusting of iron	($\frac{1}{2}$ x4)	2	6

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Qst.Nos.	Scoring Indicator	Split up Score	Sub Total	Total
III	Unit I			
(a)	de Broglie relationship statement and equation	(2)	5	
	$\lambda = \frac{h}{mv} = \frac{6.625 \times 10^{-34}}{9.1 \times 10^{-31} \times 2.19 \times 10^{6}}$	(3)		
	$= 3.3243 \times 10^{-10}$ m			
(b)	The distribution of electrons in various energy levels of an atom is called electronic configuration	2	5	
	$P \rightarrow Z = 15 \rightarrow 1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^3$	1½		
	$S \rightarrow Z = 16 \rightarrow 1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^4$	1½		
(c)	Shapes of S, P_x, P_y, P_z orbitals	1+1+1+1	5	15
	Heisenberg's uncertainity principle	1		
	(OR)			

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Qst.Nos.	Scoring Indicator	Split up Score	Sub Total	Total
IV (a)	Explanation of formation of ionic bond	3	5	
	Any two examples	1+1		
(b)	Any 5 properties of covalent compounds.	1+1+1+1+1	5	
(c)	Statement of Pauli's exclusion principle	2½	5	15
	Statement of Hund's rule	2½		
V	Unit - II			
(a)	Explanation of conductors with examples	2½	5	
	Explanation of insulators with examples	2½		
(b)	Any 5 differences between galvanic cell & electrolytic cell	5	5	
(c)	Five applications of electrolysis	5	5	15
	(OR)			

SCHEME OF VALUATION

(Scoring Indicators)

Revision (15) **Course Code:** 2004

Course Title: ENGINEERING CHEMISTRY-II

Qst.Nos.	Scoring Indicator	Split up Score	Sub Total	Total
VI				
(a)	Four differences between metallic conductors & electrolytic conductors.	1+1+1+1	5	
	Examples for metallic & electrolytic conductors.	1		
(b)	Statement for electro chemical series (activity series)	(2)	5	
	Any 3 applications of series	(1+1+1)		
(c)	Construction - electrode reactions net cell reaction of H_2-O_2 fuel cell.	(2+1+1 +1)	5	15
	Unit III			
VII				
(a)	Any 4 differences between saturated & unsaturated organic compounds	(1+1+1+1 +	5	
	2 examples	1)		
(b)	Any 5 characteristics of refractories	(1+1+1+1+1)	5	
(c)	2 uses & 3 advantages of optical fibres	(2+1+1+1)	5	15

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Qst.Nos.	Scoring Indicator	Split up Score	Sub Total	Total
	(OR)			
VIII (a)	Isoprene is the monomer of natural rubber.	1	5	
	Vulcanisation - explanation	+ 2		
	Any 2 improvements in physical properties of rubber	+ 2		
(b)	Monomers —		5	
	Buna-S → Butadiene + Styrene	1+1		
	Buna-N → Butadiene + Acrylonitrile	1+1		
	Nylon-6 → Caprolactum	1		
(c)	Any 5 properties of glass	1+1+1+1+1	5	15
	Unit - IV			
IX (a)	Calorific value of a fuel	2	5	
	Any 3 qualities of a good fuel	1+1+1		
(b)	Cracking - explanation	2	5	
	Thermal Cracking	1½		
	Catalytic Cracking	1½		
(c)	3 measures used to reduce water pollution	1+1+1	5	15
	Any 2 examples of water pollutants	1+1		

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Qst.Nos.	Scoring Indicator	Split up Score	Sub Total	Total
	(OR)			
X				
(a)	Explanation of acid rain	2½ + 2½	5	
	Explanation of green house effect			
(b)	Defenition of fuel	2	5	
	Three examples of liquidfuels	1+1+1		
(c)	Green chemistry - statement,	2	5	15
	principles of green chemistry	1+1+1		