Total No. of Questions: 6 *Total No. of Printed Pages:2*

Enrollment No.....

Faculty of Engineering

End Sem (Odd) Examination Dec-2017

EN2BS06 Chemistry-II

Programme: Diploma Branch/Specialisation: All

Duration: 3 Hrs. **Maximum Marks: 60**

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

Q.1	i.	Temporary hardness in water is due to (a) $CaSO_4$ (b) $Mg(HCO_3)_2$ (c) $CaCl_2$ (d) $MgSO_4$		**1**
	ii.	Drinking water must be free from (a) Turbidity (b) Colour (c) Pathogens (d) All of these		**1**
	iii.	Flash and fire point can be determined by (a) Abel's apparatus (b) Penskey Marten's apparatus (c) Cleveland's apparatus (d) None of these		**1**
	iv.	Example of liquid lubricant is (a) Mineral oil (b) Vegetable oil (c) Animal oil (d) All of these		**1**
	v.	Monomer of nylon-6,6 is (a) Adipic acid and hexamethylenediamine (b) Vinyl chloride (c) Ethylene (d) Butadiene		**1**
	vi.	Natural polymer is (a) Protein (b) Buna-S (c) PVC (d) Neoprene		**1**
	vii.	Cement is manufactured with help of (a) Rotary kiln (b) Blast furnace (c) Muffle furnace (d) Both(a) and (c)		**1**
	viii.	Silica refractory is (a) Acidic (b) Basic (c) Neutral (d) Both(a) and(c)		**1**

P.T.O.

	ix.	An example of secondary fuel is (a) Coal (b) Coke (c) Wood (d) None of these		**1**
	x.	Octane number is used for identifying quality of (a) Diesel (b) Petrol (c) Coal (d) Coke		**1**
Q.2	i.	Define Hardness. Write any of its two units.		**2**
	ii.	A water sample contains 136mg of $CaSO_4$ per litre. Calculate the hardness of water sample.		**3**
	iii.	Discuss water pollution under the following headings: (a)Definition (b) Causes (c) Effects		**5**
OR	iv.	Write the steps involved in EDTA method for the determination of hardness.		**5**
Q.3	i.	Define lubricants. Write any three functions of lubricants.		**4**
	ii.	Define and write significance of following properties: (a) Saponification no. (b) Flash and fire point.		**6**
OR	iii.	Explain classification of lubricants with an example of each.		**6**
Q.4	i.	Define polymers. Write any two examples of synthetic polymers.		**2**
	ii.	Why natural rubber needs vulcanization.		**3**
	iii.	Write preparation, properties and uses of polythene		**5**
OR	iv.	Explain classification of polymers with 2 example of each.		**5**
Q.5	i.	Define refractory materials. Give its classification and mention an example for each type.		**4**
	ii.	What is Plaster of Paris? Write its formula and two applications.		**6**
OR	iii.	Explain R.U.L property of refractory material with its significance.		**6**
Q.6	i.	Define fuel. Write its classification.		**4**
	ii.	Explain nuclear fission and nuclear fusion reactions		**6**
OR	iii.	Differentiate between octane number and cetane number.		**6**

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Marking Scheme

Q.1	i.	(b) $Mg(HCO_3)_2$	**1**
	ii.	(d) All of these	**1**
	iii.	(c) Cleveland's apparatus	**1**
	iv.	(d) All of these	**1**
	v.	(a) Adipic acid and hexamethylenediamine	**1**
	vi.	(a) Protein	**1**
	vii.	(a) Rotary kiln	**1**
	viii.	(a) Acidic	**1**
	ix.	(b) Coke	**1**
	x.	(b) Petrol	**1**
Q.2	i.	Definition – 1 mark 2 units – 1 mark	**2**
	ii.	Formula – 1 mark Values substitution – 1 mark Answer with units – 1 mark	**3**
	iii.	(a)Definition – 1 mark (b) Causes – 2 marks (c) Effects – 2 marks	**5**
OR	iv.	Steps involved in method	**5**
Q.3	i.	Definition – 1 mark Any three functions – 3 marks	**4**
	ii.	Definition (a) & (b) 1 mark each (1 mark * 2 = 2 marks) 2 significance (a) & (b) 2 marks each (2 mark * 2 = 4 marks)	**6**
OR	iii.	Classification - 4 marks Example - 2 marks	**6**
Q.4	i.	Definition – 1 mark Two examples – 1 mark	**2**
	ii.	3 Reasons 1 mark each (1 mark * 3 = 3 marks)	**3**
	iii.	Reaction – 1 mark 2 properties – 2 marks 2 uses – 2 marks	**5**
OR	iv.	Classification – 3 marks Examples - 2 marks	**5**
Q.5	i.	Definition – 1 mark Classification – 1.5 marks Example - 1.5 marks	**4**
	ii.	Introduction – 2 marks Formula – 2 marks 2 applications – 2 marks	**6**
OR	iii.	Explanation – 4 marks Significance – 2 marks	**6**
Q.6	i.	Definition – 2 marks Classification – 2 marks	**4**
	ii.	Explanation – 3 marks Reaction – 3 marks	**6**
OR	iii.	Three points of differentiation (2 marks * 3 = 6 marks)	**6**

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