

7455

Jharkhand University of Technology, Ranchi

1st Semester Diploma Examination, 2022

Subject : Engineering Chemistry

Subject Code : 104

Time Allowed : 3 Hours

Full Marks : 80

Pass Marks : 26

*Answer in your own words.**Answer five questions in which Question No. 1 is compulsory and**Answer any four from rest questions.**All questions carry equal marks.*

2×8=16

1. (a) During a chemical reaction, atomic number

(i) changes

(ii) remains same

(iii) changes and then is restored

(iv) changes alternately

(b) The electronic configuration of an atom having atomic number 20 is

(i) 2, 8, 8, 2

(ii) 2, 8, 10

(iii) 2, 6, 8, 4

(iv) 2, 4, 8, 6

(c) Which of the following does not conduct electricity?

(i) Fused NaCl

(ii) Solid NaCl

(iii) Brine solution

(iv) Copper

(d) The principal ore of Iron is

(i) Haematite

(ii) Iron pyrites

(iii) Copper pyrites

(iv) Spathic iron

(e) The main constituent of duralumin is

(i) Magnesium

(ii) Copper

(iii) Manganese

(iv) Aluminium

(f) Which of the following is thermosetting plastic?

(i) PVC

(ii) Polystyrene

(iii) Bakelite

(iv) Teflon

Please Turn Over

- (g) The presence of CFCs in the atmosphere is responsible for the
- (i) formation of ozone
 - (ii) production of healthy plants
 - (iii) depletion of ozone layer
 - (iv) None of these
- (h) The major air pollutant is
- (i) CO
 - (ii) Oxides of Nitrogen
 - (iii) Soot
 - (iv) Oxides of Sulphur
2. (a) What do you mean by Hund's rule and Aufbau's principle? Explain with example.
(b) What is plastic? Differentiate between thermosoftening and thermosetting plastic. 8+8=16
3. (a) What is Arrhenius theory of ionisation? Write its postulates.
(b) Explain Faraday's first and second law. 8+8=16
4. (a) Explain different processes involved in the extraction of metal from ore.
(b) What is alloy? What are the purposes of making alloy? 8+8=16
5. (a) What do you mean by pollution and pollutant? Explain ozone depletion with cause and control methods.
(b) Explain B.O.D. and C.O.D. with their significance. 8+8=16
6. (a) What is valency? Explain types of valency with example.
(b) Write the differences between Natural rubber and Synthetic rubber. Why vulcanisation of natural rubber is required? 8+8=16
7. Write short notes on *any two*: 8×2=16
- (i) Greenhouse effect
 - (ii) E-waste
 - (iii) Thermal insulating material
 - (iv) Electrorefining of metals
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