

1st Semester Diploma Examination, 2016

Subject : Basic Chemistry

Full Marks : 100

Subject Code : 12002

Time : 3 Hours

Pass Marks: 40

Answer all the questions.

Marks are given in the right margin.

1. Choose the correct answer from the four alternatives:

2×10=20

(i) Laws of Electrolysis given by

- (a) Faraday
- (b) Debar
- (c) Bohr
- (d) Rutherford

(ii) Bakelite is an example of

- (a) Elastomer
- (b) Fibre
- (c) Thermoplastic
- (d) Thermosetting polymer

(iii) The process of vulcanization of rubber makes it

- (a) hard
- (b) soft
- (c) less elastic
- (d) None of the above

(iv) The maximum no. of electrons with clockwise spin that can be accumulated in f-sub shell

- (a) 14
- (b) 7
- (c) 5
- (d) 10

(v) Froth Floatation process is used for the concentration of

- (a) oxide ores
- (b) sulphide ores
- (c) chloride ores
- (d) Amalgams

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(vi) Plaster of Paris is

- (a) $\text{CaSO}_4 \cdot \frac{1}{2}\text{H}_2\text{O}$
- (b) CaSO_4
- (c) $\text{CaSO}_4 \cdot \text{H}_2\text{O}$
- (d) $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$

(vii) Increased concentration of _____ in atmosphere is responsible for

- (a) green house effect
- (b) acid rain
- (c) lack of photosynthesis
- (d) death of aquatic life

(viii) Full form of CFC's

- (a) chlorofluoro carbons
- (b) carbidefluoride carbons
- (c) chlorinated fluoroscene carbon
- (d) None of the above

(ix) ${}^6_6\text{C}^{14}$ and ${}^{14}_7\text{N}^{14}$ may be classified as

- (a) Isotopes
- (b) Isotones
- (c) Isobars
- (d) Isoelectronic

(x) Molten NaCl conducts electricity due to the presence of

- (a) charged NaCl
- (b) sodium chloride molecule
- (c) free ions
- (d) free atoms of sodium and chlorine

2. (a) Write electronic configuration of the following:

2×3=6

- (i) Cl
- (ii) Cr
- (iii) Cu

(b) What are quantum numbers? Explain the types of quantum numbers.

10

3. (a) Define pollution. How does it affect the environment, animals, Humans and Plants?

10

(b) Differentiate between BOD and COD.

6

4. (a) Write composition and uses of 6
- (i) Brass
 - (ii) Gun metal
 - (iii) Bronze
- (b) Discuss lustre, ductility and malleability. Also discuss mechanical properties of metal. 10
5. (a) What are Plastics? Explain the formation of plastics by addition and condensation polymerisation with suitable examples. 10
- (b) What is Valency? Distinguish between electro-valency and covalency with suitable examples. 6
6. Write short notes on the following: 4×4=16
- (a) Faraday's law of electrolysis
 - (b) Depletion of ozone layer
 - (c) Green house effect
 - (d) Preventive Environment Management
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