



17103

21415

2 Hours/50 Marks

Seat No.

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- Instructions:** (1) **All questions are compulsory.**
(2) **Illustrate your answers with neat sketches wherever necessary.**
(3) **Figures to the right indicate full marks.**
(4) **Assume suitable data, if necessary.**
(5) **Preferably, write the answers in sequential order.**

MARKS

1. Attempt **any nine** of the following :

18

- Distinguish between energy level and subenergy level. (any two points)
- Give two applications of carbon and cobalt isotopes.
- Define electrovalency and covalency.
- Define conductor and give two examples.
- Distinguish between strong electrolyte and weak electrolyte.
- Define ECE. State the relation between ECE and CE.
- Why blue colour of copper sulphate solution turns to colourless after its electrolysis using platinum electrodes ?
- Why all ores are minerals but all minerals are not ores ? Explain with example.
- Give two purposes of making an alloy.
- Give composition of Woods metal
- Define Pigment and give two examples.
- Write two drawbacks of natural rubber.

2. Attempt **any four** of the following :

16

- Write orbital electronic configuration of ${}_9\text{F}^{19}$, ${}_{15}\text{P}^{31}$, ${}_{24}\text{Cr}^{52}$, ${}_{20}\text{Ca}^{40}$.
- Describe the formation MgO molecule with diagram and name the type of bonding.
- If atomic number and atomic mass number of an element is 11 and 23 resp. Write number of protons, neutrons and electrons each.

P.T.O.



- d) Explain Faraday's first law of electrolysis and derived its mathematical expression.
- e) Give any four assumptions of Arrhenius theory of ionisation.
- f) Explain with neat diagram the process of electroplating of silver.

3. Attempt **any four** of the following :

16

- a) Define Tensile strength, Machinability Soldering and Castability.
 - b) Name and explain the process used for concentration of Zns ore.
 - c) Define alloy. Explain Fusion method of preparation of alloy.
 - d) Distinguish between thermosoftening and thermosetting plastics.
 - e) What is vulcanisation of rubber ? Explain why it is necessary ?
 - f) Define Thermocole. Explain its preparation, properties and application.
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