



A Charutar Vidya Mandal's Institution
V.P. & R.P.T.P. SCIENCE COLLEGE
(AUTONOMOUS) (Grant – in – Aid)
Affiliated to Sardar Patel University
VALLABH VIDYANAGAR – 388120



Bachelor of Science (Semester – I) Internal Examination – 2024

US01MAICH01: Industrial Aspects of Chemistry

Date: 3rd October 2024,

Day: Thursday

Time: 11:00 AM to 12:30 PM

Total Marks: 30 Marks

Note: The figure to the right indicates full marks of the questions.

(Molecular Weight of N = 14 g/mol, O = 16 g/mol, Na = 23 g/mol, P = 31 g/mol, S = 32 g/mol, Cl = 35.5 g/mol)

Q – 1 Answer the following Multiple-Choice Questions. (All are compulsory)

[06]

- Which of the following elements has a gram-atomic weight closest to 1 g/mol?
(A) Hydrogen (H) (B) Helium (He)
(C) Beryllium (Be) (D) Lithium (Li)
- The gram-atomic weight of carbon (C) is approximately:
(A) 6 g/mol (B) 12 g/mol
(C) 14 g/mol (D) 18 g/mol
- How many orbitals are found in the p subshell?
(A) 1 (B) 3
(C) 5 (D) 7
- What type of temperature sensor is a pyrometer?
(A) Mechanical Sensor (B) Electrical Sensor
(C) Radiation Sensor (D) Solid State sensor
- What is the conversion formula from Celsius to Fahrenheit?
(A) $^{\circ}\text{F} = (1.8 \times ^{\circ}\text{C}) + 32$ (B) $^{\circ}\text{F} = (^{\circ}\text{C} - 32) / 1.8$
(C) $^{\circ}\text{C} = (1.8 \times ^{\circ}\text{F}) + 32$ (D) $^{\circ}\text{K} = ^{\circ}\text{C} + 273.16$
- Which one is known as multiple range indicator?
(A) Universal Indicator (B) True Indicator
(C) Replacement Indicator (D) Mixed Indicator

Q – 2 Write note on %weight solution and normal solution preparations.

[06]

OR

Q – 2 Calculate molecular weight and equivalent weight of given compound (1) NaOH (2) HCl (3) H_2SO_4 (4) HNO_3 (5) CH_3COOH (6) H_3PO_4

[06]

Q – 3 Write a note on Ionization energy.

[06]

OR

Q – 3 Define Electron affinity and discuss factors affecting on Electron affinities.

[06]

Q – 4 Explain Temperature scales and write down classification of temperature sensors in details.

[06]

OR

Q – 4 Explain Liquid in glass thermometer in details with neat sketch.

[06]

Q – 5 Define: Titrant, Titrand, End point, Equivalence point, indicators and Titrimetric analysis.

[06]

OR

Q – 5 Write a note on 'Universal Indicators' and 'Mixed indicator'.

[06]

