APPLIED SCIENCES   HSSC–I

SECTION – A (Marks 10)

Time allowed: 10 Minutes

NOTE:- Section–A is compulsory. All parts of this section are to be answered on the question paper itself. It should be completed in the first 10 minutes and handed over to the Centre Superintendent. Deleting/overwriting is not allowed. Do not use lead pencil.

Q. 1 Circle the correct option i.e. A / B / C / D. Each part carries one mark.

(i) Which of the following refers to the drawing of conclusions?

    A. Hypothesis   B. Information

    C. Laws   D. Rules

(ii) Which of the following is equal to 10 m.m?

    A. $\frac{1}{10}$ metre   B. 0.1 decimetre   C. 10^{-4} metre   D. 10^{4} metre

(iii) Which is the volume formula of a cylinder?

    A. $\pi r^2 h$ B. $\pi r h$ C. $2\pi r^2 h$ D. $2\pi r h$

(iv) Which of the following scientists described the idea of forces in pairs?

    A. Archimedes   B. Sir Issac Newton

    C. Russel   D. Boyle's Paulli

(v) Which is **TRUE** about per cent efficiency?

    A. $\frac{VR}{MA} \times 100$ B. $\frac{Work\ input}{Work\ output} \times 100$

    C. $\frac{Load}{effort} \times 100$ D. $\frac{1/VR}{1/MA} \times 100$

(vi) What is the atomicity of ozone?

    A. 1   B. 2

    C. 3   D. 4

(vii) Which of the following formulae refers to the empirical formula of sugar?

    A. $C_4 H_6 O_4$ B. CHO C. $CH_2 O$ D. $C_{12} H_{24} O_{12}$

(viii) Which the following results is **CORRECT** when hydrolysis of water and protein takes place?

    A. Glucose   B. Fats

    C. Amino acid   D. Glucose + fructose

(ix) Which of the following refers to SiO_2?

    A. Silicate   B. Silica

    C. Silicon   D. Disilicon oxide

(x) Which of the following reactions is called acid base reaction?

    A. Hydrolysis   B. Electrolysis

    C. Neutralisation   D. Addition reaction

For Examiner's use only:

Total Marks: | 10

Marks Obtained: |

—— 1HA-1149——

APPLIED SCIENCES HSSC–I

Time allowed: 2:20 Hours   **Total Marks Sections B and C: 40**

NOTE:- Answer any thirteen parts from Section 'B' and two questions from Section 'C' on the separately provided answer book. Use supplementary answer sheet i.e. Sheet–B if required. Write your answers neatly and legibly.

SECTION – B (Marks 26)

Q. 2   Attempt any THIRTEEN parts. The answer to each part should not exceed 2 to 4 lines.   **(13 x 2= 26)**

(i)   Define Bio-chemistry and Organic-chemistry.

(ii)   Name the volume measuring vessel used in chemical laboratory.

(iii)   Define Equilibrium and Equilibrant.

(iv)   Define Work and Energy with mathematical expression.

(v)   Define **Work output**, **Work input** and **Efficiency** with relative formulae.

(vi)   Write formula of percentage efficiency in terms of Mechanical Advantage and Velocity ratio.

(vii)   Write two clinical applications of gravity.

(viii) Briefly write the importance of Pressure.

(ix)   Name the types of Barometer.

(x)   Define Covalent and Dative bond with one example of each.

(xi)   Define Hygroscopy and Efflorescence.

(xii)   Write briefly the importance of salt in the body.

(xiii) What is the importance of pH measurement? Write briefly.

(xiv) Write any three clinical uses of calcium.

(xv)   Write down the names and formulas of three weak acids.

(xvi) Write names of carbohydrate (classification) on the basis of their size.

(xvii) Write two formulas of alcohol.

SECTION – C (Marks 14)

Note: Attempt any TWO questions. All questions carry equal marks.   **(2 x 7 = 14)**

Q. 3   Describe the construction of Barometer.

Q. 4   Explain Solar and Thermal energy.

Q. 5   Explain Nitrogen cycle in nature.