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) What will be the magnitude of work, if a force of 25 N pulls a stone through a distance of 5m in its direction?

A.	25J	B.	50J
C.	75J	D.	125J

(ii) Rate of change of velocity is known as:

A.	Displacement	B.	Acceleration
C.	Relative motion	D.	Distance

(iii) 1 litre is equal to:

A.	1000 ml	B.	100 ml
C.	$100 \, cm^3$	D.	10 ml

(iv) The maximum number of electrons which can be accommodated in M-shell of an atom is:

A.	8	B.	2
C.	32	D.	18

(v) Boyle's law states that:

A.	$P \propto V$	B.	$P \propto 1/V$
C.	$P \propto T$	D.	$P \propto 1/T$

(vi) The shape of magnetic lines of force in case of a straight current carrying conductor is:

A.	Elliptical	B.	Triangular
C.	Rectangular	D.	Circular

(vii) What will be the kinetic energy of a body if its velocity is doubled?

A.	Two times	B.	Three times
C.	Four times	D.	Five times

(viii) What is the unit of energy in System International?

A.	Watt	B.	Joule
C.	Newton	D.	Metre

(ix) As the temperature of a conductor rises, its resistance:

A.	Increases	B.	Does not change
C.	Decreases	D.	All of these

(x) Which one of the following pairs of atoms forms a pure covalent bond?

A.	Sodium and Chlorine	B.	Hydrogen and Chlorine
C.	Hydrogen and Oxygen	D.	Chlorine and Chlorine

For Examiner's use only:

Total Marks: ☐ 10

Marks Obtained: ☐

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

(i)   Why is water not used in place of mercury in thermometers?

(ii)   Differentiate between Electrolytes and Non-electrolytes with examples.

(iii)   Briefly mention the classification of lipids.

(iv)   Discuss the importance of ions in the proper functioning of human body.

(v)   Write two advantages and two disadvantages of friction.

(vi)   Define the terms **Radioactivity** and **Half-life**.

(vii) Define and write the formula for Coulomb's law.

(viii) What is meant by derived units? Give any two examples.

(ix)   How does pressure differ from force?

(x)   Define **Frequency** and **Wavelength** of a sound wave.

(xi)   What is Astigmatism? How is it detected and corrected?

(xii) Describe the characteristics of sound.

(xiii) Name the three classes of lever.

(xiv) Write a short note on pH scale.

(xv)   What properties do acids have in common?

(xvi) Define the terms **Mass** and **Weight**.

(xvii) What does a chemical formula represent?

SECTION – C (Marks 14)

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

Q. 3   a.   What are isotopes? Explain with examples.   **04**

b.   Illustrate a convex lens, indicating principal axis, principal focus and focal length.   **03**

Q. 4   a.   Discuss three methods of heat transfer.   **04**

b.   Convert 98.6 F (Fahrenheit scale) into ^{o}C (Celsieus scale).   **03**

Q. 5   a.   Explain the structure of an atom.   **03**

b.   Describe the four types of chemical reactions with examples.   **04**