APPLIED SCIENCES HSSC–I
SECTION – A (Marks 10)

Time allowed: 10 Minutes

Version Number 1 8 5 5

Note: Section – A is compulsory. All parts of this section are to be answered on the separately provided OMR Answer Sheet which 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 Choose the correct answer A / B / C / D by filling the relevant bubble for each question on the OMR Answer Sheet according to the instructions given there. Each part carries one mark.

1) Which of the following is equal to micro (μ)?

A. 10^{3} B. 10^{6} C. 10^{-6} D. 10^{-3}

2) Which of the followings is a vector quantity?

A. Velocity B. Mass C. Energy D. Power

3) Which of the following is a way of transfer of heat from Sun to Earth?

A. Convection B. Conduction C. Radiation D. None of these

4) Which of the following ratios is termed as Density?

A. Volume to mass B. Mass to volume C. Mass to Gravity D. Volume to weight

5) Which of the following is defined as force exerted divided by the contact area of the surface?

A. Power B. Weight C. Pressure D. Energy

6) Which of the following takes place when hydrogen combines with oxygen to form water?

A. Synthesis (union) B. Analysis (decompose) C. Substitution (replacement) D. None of these

7) Which of the following is always in lesser quantity in a solution?

A. Solute B. Solvent C. Both solvent and solute D. Colloidal

8) Which of the following is the mass number of an atom?

A. Proton and electron B. Neutron and Proton C. Neutron only D. Proton only

9) Which of the following causes Ionization?

A. Microwaves B. Infrared Rays C. Sound waves D. X – Rays

10) Which of the following is characterised by bitter taste?

A. Acids B. Bases C. Salts D. None of these

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) What is Force?

(ii) Differentiate between mass and weight.

(iii) What is Density? Also write its unit?

(iv) What is Pressure?

(v) Convert $98.6^{\circ}F$ into Celsius scale?

(vi) Define Transparent, translucent and opaque objects.

(vii) Define frequency and wavelength and write their units.

(viii) What is static electricity?

(ix) Write the relation between potential difference, current and resistance.

(x) Differentiate element, mixture and compound.

(xi) Enlist 6 chemicals and their chemical formulae.

(xii) Write a short note on need of water for human body.

(xiii) Write physical and chemical properties of Acids.

(xiv) Write a short note on pH scale.

(xv) Enlist importance of ions in the human body.

(xvi) What is radioactivity?

(xvii) Write physiologically active proteins.

SECTION – C (Marks 14)

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

Q. 3 Write a detailed note on atomic structure.

Q. 4 What is friction? Write advantages and disadvantages of friction.

Q. 5 Explain the characteristics of sound in detail.

Applied Science

Section- B Physics / Chemistry

(vi) Define Transparent, translucent, Opaque objects

Transparent:

If a substance or object is transparent, you can see through it very clearly.

Translucent:

A substance which is clear and pure but not traparent but clear enough to allow light to pass trough.

Opaque; object which totally not allow to pass through the light or not transparent.

(viii) **Static electricity** is the result of an imbalance between negative and positive Charges in a object.

Fact: These charges in a object the surface of an object untill they find a way to be released or discharged.

(xiii) **Physical properties of Acids**

- Acids have sour taste.
- Acids turn blue litmus red.
- Acids have PH less then 7.
- Strong acid cause burn on skin.
- Strong acid also destroy fabrics.
- Acids are electrolytes.

(xiv) **PH Literal means and note on PH scale.**

- (A PH scale is a tool for measuring acids and bases. The scale ranges from 0-14, Litmus paper is an indicator used to tell if a substance is an acid or a base)
- **PH Literal** mean ~~popte~~ potential of Hydrogen ion. PH measure can be with litmus paper and PH meter.

(xvi) (**Radioactivity** is the spontaneous disintegration of an unstable

nucleas of an isotope.
There are three types of radioactive decay / emission; Alpha particle emission, beta Particle emission, gamma particle emission). Alpha particle are the largest radioactive radiations.

OR

The emission of ionizing radiation or particles caused by the spontaneous disintegration of atom nuclei to each stability.

xvii) **Physiological active proteins.**
Proteins are serve as structural support, biochemical catalysts, hormones, enzymes, building block and inhibitors of cellular death.

(vii) **Freauency.**
The number of waves

that pass through a fixed point in unit time) also the number of cycles or vibration undergous during one unit time by a body in periodic motion.
(SI Unit is Hertz (Hz))
1 kHz = 1000 Hz

Wavelength, is the actual distance between the two successive crests) that are either throughs) or peaks in a wave.)
Wavelength and Frequency are inversely propotional.
SI Unit is 'metre' denoted with 'm' So $V = f\lambda$

(ix) **Potential difference** is a measure of energy, per unit of charge transferred between two point in a circuit.

electrical ciruciut. } Relationship

★ OHM'S Law

(iX) "The current flowing through a conductor is directly propotional to the potential difference accoss its ends provided the physical state such as tempreature e.t.c. of th conductor remains constant"

$$V \propto I$$

$$V = RI$$

INhere 'R' is constant of propoti is the resistance of the conduc

1 ohm resistance: A conductor has a resistan of 1 ohm if a current of ampere flows through it w a potential difference of 1 The symbol of Ohm is Ω (omeg

(V)

→ Convert 98.6°F into celscius scale.

$(98.6°F - 32) \times 5/9 = 37°C$

→ Convert °C to °F

$(32°C \times 9/5) + 32 = 89.6°F$

$\therefore 32°F = 0°C$

→ Fahramheit to Kelvin

$(32°F - 32) \times 5/9 + 273.15 = 273K$

→ Celcius to Kelvin

$32°C + 273 = 305\ K$

→ Kelvin to celcius

$400K - 273 = 126.85°C$

→ Kelvin to Fahramheit

$(400K - 273) \times 9/5 \times 32 = 260.33°F$