ARMY BURN HALL COLLEGE FOR BOYS
Model Paper – Class HSSC-I
SUBJECT: BIOLOGY

Time: 45 Minutes **Maximum Marks: 30**

INSTRUCTIONS

- Do not use lead pencil.
- Avoid erasing, cutting, overwriting, etc.

ATTEMPT ALL QUESTIONS

SECTION–A (Marks 5)

Q. 1 Encircle the correct option.

(1) Joints that move like a hinge on the door or back and forth are called:

A. slightly moveable joints B. hinge joints
C. ball-and-socket joints D. fixed joint

(2) Which of the following factors can lead to variations in populations?

A. genetic mutations B. environmental changes
C. gene flow between populations D. all of these

(3) Sedatives work in the brain by increasing the amount of gamma-amino butyric acid (GABA), which works as a:

A. painkiller B. antigen
C. neurotransmitter D. antibody

(4) Three layers under which the brain is covered are called:

A. Ganglion Sheath B. Meninges
C. Schwann Sheath D. Ranvier Sheath

(5) The release of hormones from the endocrine glands is primarily regulated by:

A. nervous system B. digestive system
C. circulatory system D. respiratory system

SECTION–B (Marks 10)

Q. 2 Answer the following questions.

i. What is a skeleton? Write a short note on the human skeleton.

OR

Why is it advised to breathe through the nose and not through the mouth?

ii. Describe the conditions necessary for seed germination?

OR

Explain the following terms:

(a) Hydrophytes (b) Mesophytes (c) Xerophytes (d) Halophytes

SECTION–C (Marks 15)

Note: Attempt all questions.

Q. 3 What are the causes of respiratory disorders such as bronchitis, pneumonia, and lung cancer?

OR

Why is it advised to breathe through the nose and not through the mouth?

Q. 4 Draw a cross between two pea plants. One of them has round green seeds (RRyy), while the other has wrinkled yellow seeds (rrYY).

OR

Explain the different types of receptors in human beings?

ARMY BURN HALL COLLEGE FOR BOYS
Model Paper – Class HSSC-I
SUBJECT: CHEMISTRY

Time: 45 Minutes **Maximum Marks: 30**

INSTRUCTIONS

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ATTEMPT ALL QUESTIONS

SECTION–A (Marks 5)

Q. 1 Encircle the correct option.

(1) Calculate number of moles in 100 g of water?

A. 5.5 B. 5.6
C. 7.5 D. 8.5

(2) Which one is radioactive in alkaline Earth metal?

A. francium B. caesium
C. radium D. beryllium

(3) Which isotopes are commonly used in the treatment of thyroid disorders?

A. Iodine-123 and Iodine-129 B. Iodine-124 and Iodine-126
C. Iodine-125 and Iodine-127 D. Iodine-131 and Iodine-123

(4) Which of the molecule is heterocyclic?

A. benzene B. cyclohexane
C. toluene D. furan

(5) How does the orbital concept explain chemical bonding?

A. It describes how atoms gain electrons to form bonds.
B. It explains the shape of molecules based on electron arrangement.
C. It illustrates how atoms lose electrons to achieve stability.
D. It explains the behavior of neutrons in chemical reactions.

SECTION–B (Marks 10)

Q. 2 Attempt all questions.

i. Define an ionic bond. Draw dot and cross structure for following:

$LiCl$, H_2O , CO_2 , $AlCl_3$

OR

Define redox reaction. Write name of any two oxidizing and reducing agents.

ii. Write any three postulates of kinetic molecular theory.

OR

What is cation and anion? Give one example of each.

SECTION–C (Marks 15)

Note: Attempt all questions.

Q. 3 Calculate the molecular mass or formula mass of the following compounds in amu?

(a) Benzene (C_6H_6) (b) Ethane gas (C_2H_6)

(c) Aluminium Chloride $(AlCl_3)$ (d) Iron Oxide (Fe_2O_3)

(C = 12, H = 1, Al = 27, Cl = 355, Fe = 56, O = 16)

OR

Differentiate between reversible and irreversible reactions with the help of suitable example.

Q. 4 Differentiate between evaporation and boiling point. How vapor pressure affects boiling point?

OR

Draw the Lewis structure for each of the following compounds:

(a) CO (b) HCl (c) SO_2 (d) CCl_4 (e) BF_3 (f) NH_3

ARMY BURN HALL COLLEGE FOR BOYS
Model Paper – Class HSSC-I
SUBJECT: COMPUTER SCIENCE

Time: 45 Minutes **Maximum Marks: 30**

INSTRUCTIONS

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ATTEMPT ALL QUESTIONS

SECTION–A (Marks 5)

Q. 1 Encircle the correct option.

(1) Which of the following is the insertion operator?

A. << B. >>
C. % D. \\

(2) what is the output of a NOR gate if both input

A. 0 B. 1
C. undefined D. cannot be determined

(3) What is the difference between a while loop and a for loop?

A. A for loop requires a condition, while a while loop doesn't.
B. A while loop requires initialization condition, and increment, while a for loop doesn't.
C. A while requires only condition while a for loop requires initialization condition, and increment.
D. There is no difference between them.

(4) The statements that specify the order of execution of statements are called:

A. selection control statements B. order statements
C. sequential statements D. reputational control statements

(5) Which tag is used to define the size of text in HTML?

A. <size> B. <s>
C. <font> D. <fs>

SECTION–B (Marks 10)

Q. 2 Attempt all questions.

i. Differentiate between getch() and getche() input function.

OR

Write a program which accept three integer values from user and print their sum and average.

ii. Write an algorithm to count multiples MUL of given number lying between two numbers. Also draw a flow chart.

OR

What is Kamuagh map and why is it used?

SECTION–C (Marks 15)

Note: Attempt all questions.

Q. 3 Describe the functions of the relational, logical and conditional operators?

OR

Discuss different format specifiers and escape sequences used in print f() function.

Q. 4 Find out errors if any in the following program. #include < stdio.h> void main() [
int a: print ("Enter any number = "); scanf("%f", &a), if(a>10)

printf("value is greater than 10"); else if printf("value is less than 10")]

OR

What is the purpose of switch() statement? Explain the benefits and limitations with example.

ARMY BURN HALL COLLEGE FOR BOYS
Model Paper – Class HSSC-I
SUBJECT: ENGLISH

Time: 45 Minutes **Maximum Marks: 30**

INSTRUCTIONS

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ATTEMPT ALL QUESTIONS

SECTION–A (Marks 5)

Q. 1 Encircle the correct option.

(1) The child will learn a lesson or he will rebel ultimately. The given sentence is:

A. Compound B. Simple
C. Complex D. Compound-Complex

(2) There is a mouse underneath the piano. Underneath is a/an:

A. Conjunction B. Verb
C. Adverb D. Preposition

(3) Pick out the Adverbial Clause from the following sentence. He takes exercises before he goes to school.

A. He takes exercise.
B. Exercise before he goes to school.
C. Before he goes to school.
D. All of the above

(4) Sitting by the window, the boy accident. The underlined word is a/an:

A. Gerund B. Infinitive
C. Participle D. Transitive Verb

(5) They caught the boy who stole their luggage. The underlined part of the sentence is:

A. Adverb Clause B. Adjective Clause
C. Noun Clause D. Adverb Phrase

SECTION–B (Marks 10)

Note: Attempt all questions.

Q. 2 Paraphrase the following stanza. **[5]**

Once or twice though you should fail,
If you would at last prevail,
Try again.
If we strive, 'tis no disgrace
Though we did not win the race....
What should you do in that case?
Try again.

Q. 3 Read the following passage and summarize it and also suggest a suitable title. **[5]**

Unlike other musical instruments which came into being as a result of the work of one individual or several individuals, the drum has been in exercise since the time of earliest man. Many different kinds of drums have been used all over the world by the most primitive men. It is likely that the drum was first used as a means of summoning the scattered members of a tribe. It was a kind of war signal. In time, the drum became the part of the music that people used in their battles with 'evil spirits'. It had a religious significance to those people. And since so many of their ceremonies involved dances, the drum furnished a perfect accompaniment.

SECTION–C (Marks 15)

Note: Attempt all questions.

Q. 4 Change the following sentences into Indirect Narration: **[2.5]**

(a) The teacher asked, “Who left this book on my table?”

(b) The robber said, “Empty your pockets and stand in the corner.”

(c) The girl said, “Wow, this is a marvelous bracelet!”

Q. 5 Change the voice of the following sentences: **[2.5]**

(a) I have parked the car behind the plaza.

(b) You carry the chest with me inside the room.

(c) We shell gather luggage at the station.

Q. 6 Write an essay on any one of the following topics (150-200 words): **[5]**

(a) Importance of Sports and Games (b) Our Environment

Q. 7 Write down the “National Anthem” in Urdu. **[5]**

ARMY BURN HALL COLLEGE FOR BOYS
Model Paper – Class HSSC-I
SUBJECT: MATHEMATICS

Time: 45 Minutes **Maximum Marks: 30**

INSTRUCTIONS

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ATTEMPT ALL QUESTIONS

SECTION–A (Marks 5)

Q. 1 Encircle the correct option.

(1) In proportion a : b :: c : d, b and c are called:

A. means B. extremes
C. fourth proportional D. third proportion

(2) If a point lies on the perpendicular bisector of a line segment, what is the relationship between its distances from the endpoints of the segment?

A. The distances are equal.
B. The distance from one endpoint is greater than the distance from the other.
C. The distances are unequal but sum up to the length of the segment.
D. The distances are always equal than the length of the segment.

(3) If two circles touch externally then distance between their centers is equal to:

A. sum of their radii B. difference of their radii
C. product of their radii D. none of these

(4) Locus of a point in a plane equidistant from a fixed point is called:

A. radius B. circle
C. circumference D. diameter

(5) The nature of the roots of equation is found by:

A. sum of the roots B. product of the roots
C. synthetic division D. discriminant

SECTION–B (Marks 10)

Note: Attempt all questions.

Q. 2 Find r when $\theta = \frac{3\pi}{4}$ radian, $l = 15\ cm.$

OR

If α, β are the roots of $2x^2 + 3x + 1 = 0$, then find the values of $\frac{1}{\alpha^2} + \frac{1}{\beta^2}$

Q. 3 Prove that $\frac{Cot^2 x}{Cosec\ x - 1} = Cosec\ x + 1$

OR

If $5 : 5x$ are in continued proportion, find the value of x.

SECTION–C (Marks 15)

Note: Attempt all questions.

Q. 4 Verify distributive properties of union over intersection for $A = \{0, \pm1, \pm2, \pm3, \pm4, \pm5\}$, $B = \{-1, -2, -3, -4, -5\}$, $C = \{-1, -2, +3, +4\}$

OR

Find the value of m and n, if both sum and product of roots of the equation $mx^2 - 3x - n = 0$ are equal to $\frac{3}{5}$

Q. 5 Resolve into partial fractions $\frac{x^2 + 2x + 1}{(x-1)(x+1)}$

OR

Solve the equation $\frac{(x-1)^2 + (x+2)^2}{(x-1)^2 - (x+2)^2} = \frac{17}{8}$

ARMY BURN HALL COLLEGE FOR BOYS
Model Paper – Class HSSC-I
SUBJECT: PHYSICS

Time: 45 Minutes **Maximum Marks: 30**

INSTRUCTIONS

- Do not use lead pencil.
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ATTEMPT ALL QUESTIONS

SECTION–A (Marks 5)

Q. 1 Encircle the correct option.

(1) If the amplitude of oscillation of a mass-spring system is doubled, how does this affect the maximum velocity of the mass?

A. it remains the same B. it double
C. it quadruples D. it halves

(2) NOT gate works in such a way that if its input is 0, its output would be:

A. 1 B. 2
C. 0 D. 10

(3) Which particles are nucleons?

A. electrons and protons B. protons and neutrons
C. electrons and neutrons D. electrons and positrons

(4) What is the phase difference between the displacement and velocity of an object in simple harmonic motion at its equilibrium position?

A. 0° B. 90°
C. 180° D. 270°

(5) Joules law is given by:

A. $H = I^2Rt$ B. $H = R^2It$
C. $H = V^2Rt$ D. $H = R^2Vt$

SECTION–B (Marks 10)

Q. 2 Attempt all questions.

i. Define the following by diagram

Right Hand Rule, Fleming Left Hand Rule in case of magnetism

OR

In which form energy is stored in a capacitor?

ii. When you use a simple magnifying glass, does it matter whether you hold the object to be examined closer to the lens than its focal length or farther away? Explain.

OR

How a generator inside a hydroelectric power station converts mechanical energy into electrical energy?

SECTION–C (Marks 15)

Note: Attempt all questions.

Q. 3 What is meant by electric potential? Derive the mathematical expression for it. Give its SI unit and also define it?

OR

What are the hazards of electricity? What safety measures are taken in household electricity to safeguard for these hazards?

Q. 4 Explain combination of resistors in parallel.

OR

Give the comparison of Coulomb’s law and Gravitation law.