BURARI PUBLIC SCHOOL

…a venture with UNIQUE

PERIODIC TEST - II

CLASS- IX

SUBJECT - SCIENCE **Date___/___/_____**

M.M.: 40

Name: ……..... Roll No..…….... T. sign.....

General Instructions:

Read the following instructions carefully and follow them.

(i) This question paper contains **18** questions. **All** questions are **compulsory.**

(ii) Question paper is divided into **THREE** sections- **A, B** and **C.**

Section A: Biology (14 Marks)

Section B: Chemistry (13 Marks) Section

C: Physics (13 Marks)

(iii) The question paper has MCQs, VSAs, SAs, LAs and C/S-BQs. Marks are given against each question.

(iv) There are case based questions (CBQs) with three sub-questions and are of **4** marks each.

Note- As per the guidelines of the New Education Policy (NEP), this holiday homework assessment will be conducted as an Open Book Assessment. Students are encouraged to refer to their textbooks, notebooks, and other learning resources while completing the assignment. The focus of this assessment is on understanding, application, and expression of ideas rather than rote learning. Students are advised to maintain honesty and originality in their work.

SECTION A (BIOLOGY)

1. Flower's anthers are removed before it matures. Later, pollen from another plant of the same species is dusted onto its stigma and seeds are produced. Which process has been ensured here? **1**

a) Self-pollination
b) Fertilisation
c) Cross-pollination
d) Tissue culture

Directions: Question number 2 is Assertion and Reason based questions.
Two statements are given, one labelled as Assertion (A)
and the other is labelled as Reason (R).
Select the correct answer to these questions from the codes (A), (B), (C) and (D) as given below:

2. **Assertion (A):** The zygote formed after fertilisation immediately attaches to the uterus wall.

Reason (R): The uterus wall is always prepared to receive the zygote. **1**

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true, but R is not the correct explanation of A.
c) A is true, but R is false.
d) A is false, but R is true.

3. Why does asexual reproduction produce offspring's that are genetically identical to the parent? **2**

4. What protective devices can be used during sexual activity to reduce the spread of STI? **2**

5. Explain the parts of female reproductive system with the help of a well labelled diagram. **3**

6. i Differentiate between self and cross pollination. **5**
ii. How does meiosis help create variations in sexual reproduction.
iii. State two advantages of vegetative reproduction.
iv. What happens when egg is not fertilised?
v. Define gametogenesis.

SECTION B (CHEMISTRY)

7.ss Which method is used to separate cream from milk? **1**

a) Filtration
b) Centrifugation
c) Sublimation
d) Chromatography

8. Which statement about chromatography is correct? **1**

a) It separates insoluble impurities
b) It separates substances based on colour differences
c) It separates liquids using boiling points
d) It separates magnetic substances

9. The label on a cooking oil pack says one litre (910 g). If this oil is mixed with water, will it form a separate layer? If so, which substance will be on top? How will you separate the two layers? **2**

10. Two miscible liquids, A and B, are present in a mixture. The boiling point of A is 60 °C and the boiling point of B is 90 °C. Suggest a method to separate them. Also, draw a labelled diagram of the method suggested **2**

11. Compare evaporation, crystallization and distillation. In which situation, would you prefer each of these over the others? **3**

12. Read the following passage and answer the following questions:

A student was given a mixture of ammonium chloride and common salt. To separate the components, the mixture was heated in a china dish covered with an inverted funnel. After some time, white vapours changed directly into solid particles on the cooler walls of the funnel.

(i) Name the process used in this separation. **1**
(ii) Which substance undergoes sublimation in this mixture? **1**
(iii) Which substance undergoes sublimation in this mixture? **1**
(iv) Why does common salt remain behind in the china dish? **2**

SECTION C (PHYSICS)

13. When a net force acts on an object, we observe that the object accelerates: **1**

(i) opposite to the direction of force, with acceleration proportional to the force acting on the object.
(ii) opposite to the direction of force, with acceleration proportional to the mass of the object.
(iii) in the direction of force, with acceleration inversely proportional to the force acting on the object.
(iv) in the direction of force, with acceleration proportional to the force acting on the object.

14. **Assertion (A):** An object at rest remains at rest unless acted upon by an external force.
Reason (R): This is explained by Newton's First Law of Motion. **1**

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true, but R is not the correct explanation of A.
c)A is true, but R is false.
d) A is false, but R is true.

15. Draw

(i) position-time, and

(ii) velocity - time graphs for an object on which no net force is acting on it. **2**

16. A student is trying to push a stationary block of 25 kg on a horizontal floor. The maximum force of friction opposing this motion is 50 N. Determine the displacement of the block in 2 seconds if Rahul pushes it with a constant force of (i) 50 N and (ii) 55 N in the forward direction. **2**

17. i. A tractor pulls a harrow (a ploughing tool) of mass m, with a net force F resulting in an acceleration of a, the same tractor pulls a trolley of mass m with a force F producing an acceleration of a_2. If the tractor now pulls the trolley with the harrow placed on it (with the same force F), then obtain an expression for the resulting acceleration in terms of a, and a_2. Ignore friction.

ii. During a High jump event, a landing mat or sand bed is placed for the athlete to fall upon. Explain the reason behind it. **3**

18. Read the following passage and answer the following questions: **4**

During a sports activity, a student jumped from a small boat onto the river bank. As soon as the student jumped forward, the boat moved backward in water. Later, the teacher explained that this happens because of action and reaction forces acting on different bodies.

a) Why did the boat move backward when the student jumped forward?
b) State Newton's Third Law of Motion
c) A bullet of mass 50 g moving with a speed of 100 m s^1 enters a heavy stationary wooden block and stops after penetrating a distance of 50 cm. Estimate the stopping force acting on the bullet (assume that the bullet undergoes constant acceleration within the block)