



Hansraj Public School, Sector-6 Panchkula
Class X, Science
Periodic Test-III, Session 2022-23

DATE: - 21st November, 2022
Time: 90 minutes

Roll No.: 8
Maximum Marks: 40

General Instructions:

- This question paper consists of 20 questions in 4 sections .
- All questions are compulsory.
- Section A consists of 10 objective type questions carrying 1 mark each.
- Section B consists of 3 Very Short questions carrying 02 marks each. Answers to these questions should be in the range of 30 to 50 words.
- Section C consists of 4 Short Answer type questions carrying 03 marks each. Answers to these questions should in the range of 50 to 80 words
- Section D consists of 3 source-based/case-based units of assessment of 04 marks each with sub-parts.

SECTION - A

Q1. Ionic compounds conduct electricity

- In solid state
- In molten state
- Both (a) and (b)
- None of these

Q2. Which of the following series contains only non -metals

- C , Li , Ni , N
- Li , Si , C , N
- Li , He , C , N
- S , He , C , N

Q3. The ability of a cell to divide into several cells during reproduction in Plasmodium is called

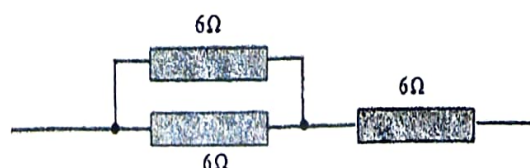
- Budding
- Multiple fission
- Regeneration
- Fragmentation

Q4. During adolescence, several changes occur in the human body. Mark one change associated with sexual maturation in boys:

- Loss of milk teeth
- Increase in height
- Cracking of voice
- Weight gain

Q5 What are those organisms called which bear both the sex organs in the same individual? Give an example.

Q6. If in the given arrangement, the three resistors are to be replaced by a single resistor. What will be the value of this resistor?



(a) 4Ω

(b) 6Ω

(c) 9Ω

(d) 18Ω

Q7. Plastic insulation surrounds a conducting wire having diameter d and length l . A decrease in the resistance of the wire would be produced by an increase in the

- (a) length l of the wire
- (b) diameter d of the wire
- (c) temperature of the wire
- (d) thickness of the plastic insulation

Q. no8,9and10 are Assertion - Reasoning based questions.

These consist of two statements – Assertion (A) and Reason (R). Answer these questions selecting the appropriate option given below:

- (a) Both A and R are true and R is the correct explanation of A
- (b) Both A and R are true and R is not the correct explanation of A
- (c) A is true but R is false
- (d) A is False but R is true

Q8. Assertion (A) : Alloys are commonly used in electrical heating devices like electrical iron and heater.
Reason (R) : Resistivity of an alloy is generally higher than that of its constituent metals but the alloys have lower melting point than their constituent metals.

Q9. Assertion (A) : Al_2O_3 is amphoteric in nature .

Reason (R) : Non -metals generally form acidic oxides.

Q10. Assertion: Reproduction involves creation of DNA copy and additional cellular apparatus by the cell involved in the process.

Reason: DNA copying mechanism creates variations which are useful for ensuring the survival of the species.

SECTION – B

Q. no. 11 to 13 are very short answer questions.

Q11. Two ores A and B were taken. On heating , ore A gives CO_2 and ore B gives SO_2 . .What steps will you take to convert them into metals ?

Q12. Draw diagram of human female reproductive system. Label the important parts.

Q13. What is the amount of current flowing through an electric press, if the amount of charge passing through a conductor in 10 minutes is 300 C?

SECTION - C

Q. no. 14 to 17 are short answer questions.

Q14 An alkali metal A , gives a compound B (Molecular mass =40) on reacting with water. The compound B , gives a soluble compound C , on treatment with aluminium oxide. Identify A , B , and C .

Q15. Explain the following:

- i) Carbon cannot reduce oxides of Na, Mg, and Al
- ii) electrolytic refining of copper (with diagram)
- iii) Calcium floats over water'

Q16.(a) Give the functions of :

Stigma

Ovary.

(b) State in brief the formation of seed in a flower. Explain.

Q17. (I)Write an expression for Joule 's heating effect.

(II) Why is tungsten used almost exclusively for filament of electric lamps?.

SECTION - D

Q.no. 18 to 20 are source-based/case-based units of assessment of 04 marks each with sub-parts.

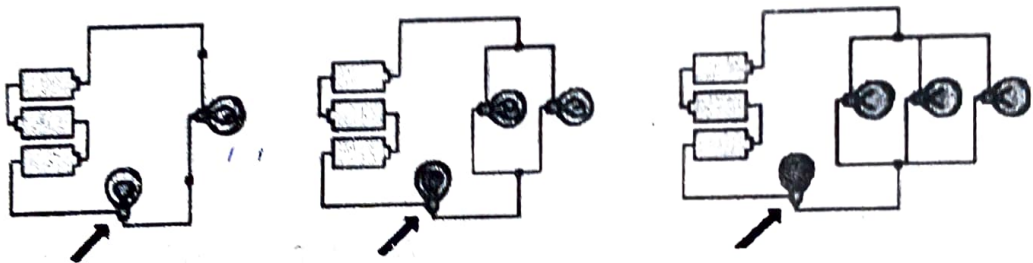
Q18. Read the following and answer the questions that follows it.

A series circuit can be constructed by connecting devices (light bulbs) in such a manner that there is a single pathway for charge flow; the bulbs are added to the same line with no branching point. As more and more light bulbs are added, the brightness of each bulb gradually decreases. This observation is an indicator that the current within the circuit is decreasing. A final observation that is unique to series circuits is the effect of removing a bulb from a socket. If one of three bulbs in a series circuit is unscrewed from its socket, then it is observed that the other bulbs immediately go out.

18 (i) Quite obviously, the appliances in the kitchen are

- a) connected in series.
- b) not connected in series.
- c) not connected in parallel.
- d) connected in parallel

18(ii) A study of the overall current for parallel connections requires the addition of an indicator bulb. The indicator bulb (shown with an arrow) is placed outside of the branches and allows one to observe the effect of additional resistors upon the overall current. The bulbs that are placed in the parallel branches only provide an indicator of the current through that particular branch. So if investigating the effect of the number of resistors upon the overall current and resistance, one must make careful observations of the indicator bulb, not the bulbs that are placed in the branches. The diagram below depicts the typical observations.



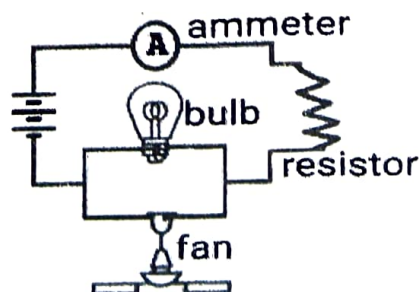
The glow of the indicator bulb indicates in the given circuits-

- a. that the resistors are in series
- b. the effect of additional resistors upon the overall current
- c. the number of bulbs in connection
- d. the presence of current in the circuit

18(iii) For parallel circuits, as the number of resistors increases, the overall current-

- a. remains same
- b. increases
- c. decreases
- d. Sometimes decreases, sometimes increases

18 (iv) An electric circuit is diagrammed below. Indicate which two devices are connected in series and which two devices are connected in parallel respectively-



- a. Bulb and resistor ; Ammeter and fan
- b. Bulb and ammeter ; Resistor and speaker
- c. Bulb and fan ; Ammeter and resistor
- d. Ammeter and resistor ; Bulb and fan

Q19. Alloying is a very good method of improving the properties of a metal. This gives the desired properties of the metal. For example, Iron is the most widely used metal, but it is never used in its pure state. This is because pure iron is very soft and stretches easily when hot. But if it is mixed with a small amount of carbon, it becomes hard and strong. When iron is mixed with nickel and chromium, we get stainless steel, which is hard and does not rust. If iron is mixed with some other substance, its properties change, in fact the properties of any metal can be changed if it is mixed with some other substance. The substance added may be a metal or a nonmetal.

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- (i) What are alloys?
 - (ii) Give the composition of Brass
 - (iii) What are constituents of alloy Solder ? Which property of Solder makes it suitable for welding electric wires.?
 - (iv) What is Amalgam?

Q20. CASE STUDY:

Reproduction is the process by which a living organism is able to produce new individuals of its own kind. Reproduction involves the creation of DNA copy. The process of DNA copying leads to variations. Living organisms reproduce mainly through Asexual and Sexual reproduction.

- (A) State two reasons for the appearance of variations among the progeny formed by sexual reproduction.
- (B) Why are budding, fragmentation and regeneration all considered as asexual modes of reproduction.
- (C) What leads to maintenance of chromosome number in a species generation after generation.
- (D) State the benefits of reproduction.