

Self Assessment Paper

SECTION A

1. Write the function of voltmeter in an electric circuit.

AI 2. Why is a solar cooker painted black from outside ?

1

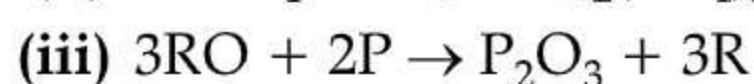
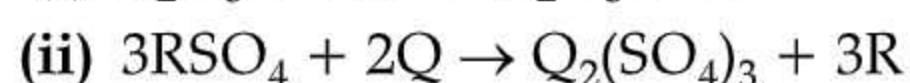
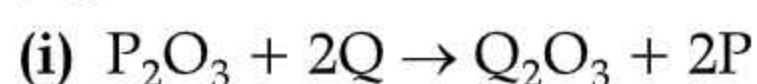
OR

Although coal and petroleum are produced by the degradation of biomass, yet we need to conserve these resources. Why ?

1

3. Answer question numbers 3(a) - 3(d) on the basis of your understanding of the following paragraph and the related studied concepts.

P, Q and R are three elements which undergo chemical reactions according to the following equations:



(a) Which element is most reactive?

(b) Which element is least reactive?

(c) The type of reactions is

(i) Displacement reaction

(ii) Combination reaction

(iii) Neutralisation reaction

(iv) Substitution reaction

(d) Define the reaction.

4

4. A narrow beam PQ of white light is passing through a glass prism ABC as shown in the diagram. Study the diagram and answer the following questions.

(a) Name the phenomenon observed in above set-up?

(b) In nature, this phenomenon is observed in

(i) Formation of rainbow

(ii) Twinkling of stars

(iii) Blue colour of sky

(iv) Advance sunrise

(c) Which of the following statement is correct about constituents of white light based on above observations?

(i) White light consists of seven colours.

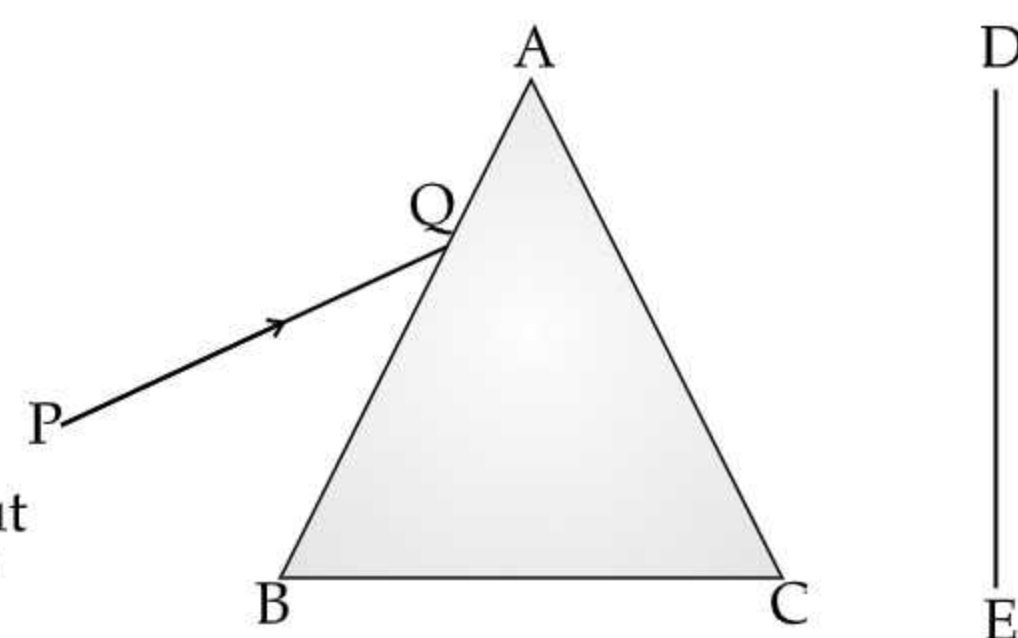
(ii) Violet colour suffers minimum deviation.

(iii) Red light suffers maximum deviation.

(iv) All the colours of the white light move with different speed.

4

(d) Trace the figure on your answer sheet and show the path of emergent beam as observed on the screen DE.



5. Three beakers labelled as A, B and C each containing 25 mL of water was taken. A small amount of NaOH, anhydrous CuSO_4 and NaCl were added to the beakers A, B and C respectively. It was observed that there was an increase in the temperature of the solutions contained in beakers A and B, whereas in case of beaker C, the temperature of the solution falls. Which one of the following statement(s) is (are) correct? 1
- (i) In beakers A and B, exothermic process has occurred.
(ii) In beakers A and B, endothermic process has occurred.
(iii) In beaker C, exothermic process has occurred.
(iv) In beaker C, endothermic process has occurred.
- (a) (i) only (b) (ii) only
(c) (i) and (iv) (d) (ii) and (iii)

OR

- Ethane, with the molecular formula C_2H_6 has : 1
- (a) 6 covalent bonds (b) 7 covalent bonds
(c) 8 covalent bonds (d) 9 covalent bonds
6. What type of oxide would Eka- aluminium form? 1
- (a) EO_3 (b) E_2O_2
(c) E_2O_3 (d) EO
7. Choose the correct path of urine in our body : 1
- (a) kidney → ureter → urethra → urinary bladder
(b) kidney → urinary bladder → urethra → ureter
(c) kidney → ureter → urinary bladder → urethra
(d) urinary bladder → kidney → ureter → urethra
8. Which of the following four secretions is incorrectly matched with its source and action? 1

	Secretion	Source	Action
(a)	Salivary amylase	Salivary gland	Breaks down starch into sugar.
(b)	Rennin	Stomach	Curdling of milk
(c)	Pepsin	Stomach	Breaks down protein into amino acids.
(d)	Lipase	Pancreas	Release of bile juice

9. Which of the following is mismatched? 1
- (a) Cerebrum – Memory (b) Medulla oblongata – Temperature regulation
(c) Cerebellum – Equilibrium (d) Hypothalamus – Controls pituitary
10. From the list given below, select the character which can be acquired but not inherited. 1
- (a) colour of eye. (b) colour of skin.
(c) size of body. (d) nature of hair.
11. In human females, an event that reflects onset of reproductive phase is 1
- (a) growth of body (b) changes in hair pattern
(c) change in voice (d) menstruation
12. In humans, the life processes are controlled and regulated by 1
- (a) reproductive and endocrine system
(b) respiratory and nervous system
(c) endocrine and digestive system
(d) nervous and endocrine system

For question numbers 13 and 14, two statements are given- one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (i), (ii), (iii) and (iv) as given below :

- (i) Both A and R are true and R is correct explanation of the assertion.
(ii) Both A and R are true but R is not the correct explanation of the assertion.
(iii) A is true but R is false.
(iv) A is false but R is true.

13. **Assertion (A)** : Valves are present in the arteries. 1
Reason (R) : Arteries carry oxygenated blood from heart to different body parts except pulmonary artery.

OR

- Assertion (A)** : Herbivores have larger small intestine as compared to carnivores. 1
Reason (R) : Complete digestion of food takes place in small intestine.
14. **Assertion (A)** : Plants are vegetatively propagated even though they bear seeds. 1
Reason (R) : Potatoes reproduce through tubers, apples by cutting etc.

SECTION B

15. In the electrolysis of water : 3
(i) Name the gas collected at the cathode and anode respectively.
(ii) Why the volume of one gas, collected at one electrode is double than that at the other ? Name this gas.
(iii) How will you test the evolved gases ?

- AI** 16. What is meant by water of crystallization ? How many molecules of water are present in hydrated copper sulphate ? Write its formula. What colour change do you observe when it is heated ? 3

OR

Write one example of each of the following :

- (i) Most malleable metal and most ductile metal.
(ii) The best conductor of heat and the poorest conductor of heat.
(iii) A metal with highest melting point and a metal with lowest melting point.
- AI** 17. Draw the structures of the following compounds and identify the functional group present in them : 3
(i) Butanoic acid
(ii) Bromopropane
(iii) Butyne
- AI** 18. What are the functions of testis in the human male reproductive system ? Why are these located outside the abdominal cavity ? Who is responsible for bringing about changes in appearance seen in boys at the time of puberty ? 3

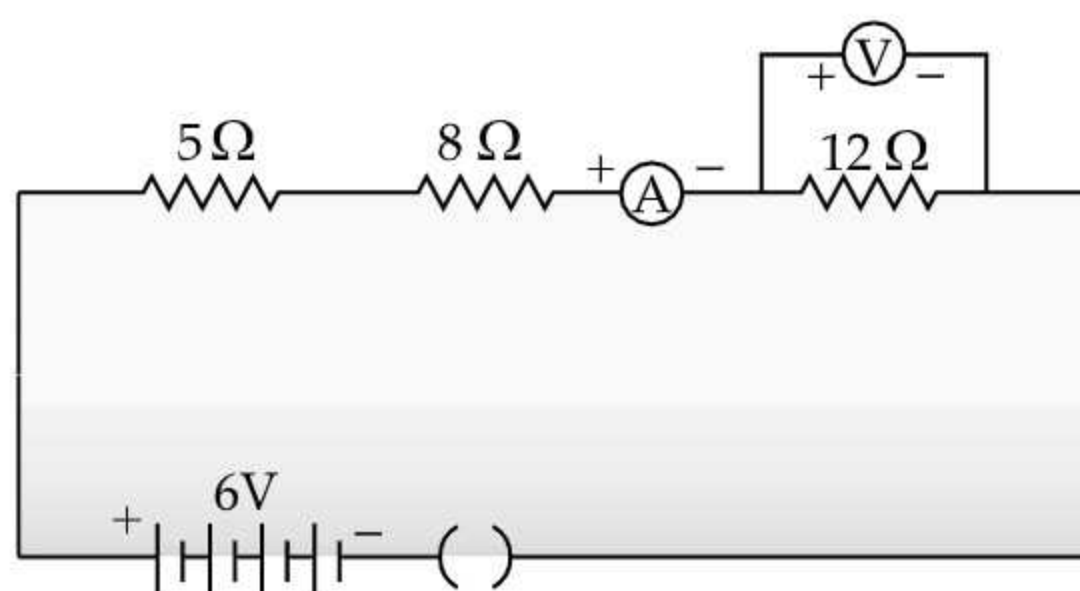
19. Define breathing. Explain the mechanism of breathing in human beings. 3

OR

What are acquired traits ? Why are these traits generally not inherited over generations ? Explain.

20. State the law of refraction of light. Explain the term 'absolute refraction index of a medium' and write an expression to relate it with the speed of light in vacuum. 3

- AI** 21. Consider the following circuit : 3



What would be the readings of the ammeter and the voltmeter when key is closed ? Give reason to justify your answer.

- AI** 22. (i) What is meant by a magnetic field ? Mention two parameters that are necessary to describe it completely. 3

(ii) If field lines of a magnetic field are crossed at a point, what does it indicate ?

23. What is biogas ? Describe the steps involved in obtaining biogas. 3

OR

The existence of decomposers is essential in a biosphere. Justify by giving reason.

SECTION C

25. (i) Define universal indicator. For what purpose it is used ?
(ii) Two solutions A and B have pH values of 3.0 and 9.5 respectively. Which of these will turn litmus solution from blue to red and which will turn phenolphthalein from colourless to pink ?
(iii) Water is a neutral substance. What colour will you get when you add a few drops of universal indicator to a test tube containing distilled water ?

5

OR

- (i) Write the steps involved in the extraction of pure metals in the middle of the activity series from their carbonate ores.
(ii) How is copper extracted from its sulphide ore ? Explain the various steps supported by chemical equations. Draw labelled diagram for the electrolytic refining of copper.
- [AI]** 26. (a) The modern periodic table has been evolved through the early attempts of Dobereiner, Newland and Mendeleev. List one advantage and one limitation of all the three attempts.
(b) Name the scientist who first of all showed that atomic number of an element is a more fundamental property than its atomic mass.

5

- [AI]** 27. (a) Name the respective part of human female reproductive system :

- (i) that produces eggs,
(ii) where fusion of egg and sperm takes place, and
(iii) where zygote gets implanted.

- (b) Describe in brief what happens to the zygote after it gets implanted.

5

OR

What are fossils ? How are they formed ? List two methods of determining the age of fossils. Explain in brief the importance of fossils in deciding the evolutionary relationships.

28. Mention the organ and site of photosynthesis in green plants. What are the raw materials essential for this process ? How are they obtained ? Write complete balanced chemical equation for the process. Name the by-products.

5

- [AI]** 29. (i) Define optical centre of a spherical lens.

- (ii) A divergent lens has a focal length of 20 cm. At what distance should an object of height 4 cm from the optical centre of the lens be placed so that its image is formed 10 cm away from the lens. Find the size of the image also.

- (iii) Draw a ray diagram to show the formation of image in above situation.

5

OR

- (a) Write the function of each of the following parts of human eye :

(i) Cornea

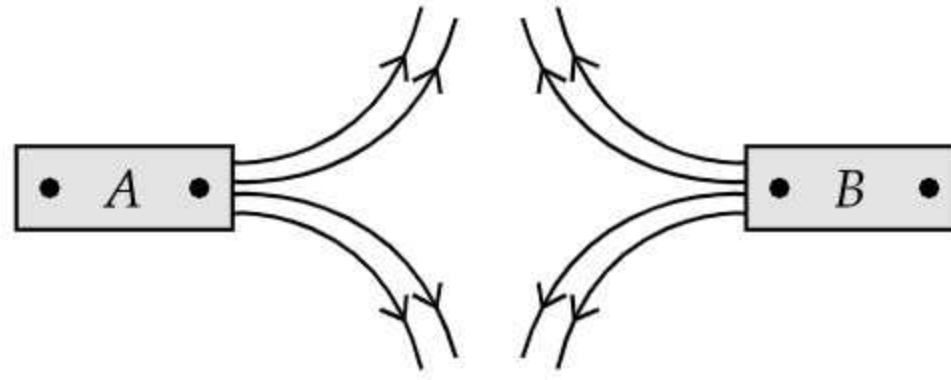
(ii) Iris

(iii) Crystalline lens

(iv) Ciliary muscles

- (b) Why does the sun appear reddish early in the morning ? Will this phenomenon be observed by an astronaut on the Moon ? Give reason to justify your answer.

- AI 30.** (a) Magnetic field lines of two bar magnets A and B are as shown below. Name the poles of the magnets facing each other.



- (b) Two magnetic field lines never intersect each other. Why ?
- (c) How does the strength of the magnetic field at the centre of a current carrying circular coil depend on the
- (i) Radius of the coil,
 - (ii) Number of turns in the coil, and
 - (iii) Strength of the current flowing in the coil ?