General Instructions:
1) Read carefully and attempt all questions.
2) Encircle the correct option of each MCQ as shown in the example below.
   Example: $2H_2 + O_2 \rightarrow xH_2O$
   The above equation is balanced when:
   (a) $x = 2$  (b) $x = 3$  (c) $x = 4$  (d) $x = 6$
3) Use black/blue ink for writing. Use of lead pencil is not allowed.
4) If more than one option is encircled in a question, no mark will be given.

Total Marks: 48   Part-A (Multiple Choice Questions)   Total Time: 1 Hour

Instructions: Thirty two (32) Multiple Choice Questions (MCQs) are given in this part. Each question carries 1.5 marks.

Q. No.1. Which of the following is a voluntary action?
   (a) Breathing  (b) Heartbeat  (c) Reading  (d) Blood circulation

Q. No.2. Which of the following can cause stone formation in kidneys?
   (a) Salts  (b) Sugar  (c) Water  (d) Fruits
Q. No.3. Identify the ureter from the given diagram.

(a) W  
(b) X  
(c) Y  
(d) Z

Q. No.4. Number of daughter cells produced from a parent cell in meiosis is:

(a) 2  
(b) 4  
(c) 6  
(d) 8

Q. No.5. Which of the following statements is correct for mitosis?

(a) Number of chromosomes remains same  
(b) Number of chromosomes becomes half  
(c) Gametes are produced  
(d) Four daughter cells are produced

Q. No.6. Replication of DNA produces:

(a) Carbohydrates  
(b) Proteins  
(c) Vitamins  
(d) New strands

Q. No.7. Which of the following is a biogenetic product?

(a) Disprin  
(b) Aspirin  
(c) Insulin  
(d) Quinine

Q. No.8. Which of the following mosquitoes is the cause of dengue fever?

(a) Male aedes  
(b) Female aedes  
(c) Male culex  
(d) Female culex

Q. No.9. Which one of the following is the major cause of lungs disorder?

(a) Water pollution  
(b) Noise pollution  
(c) Land pollution  
(d) Air pollution

Q. No.10. All of the following gases cause greenhouse effect EXCEPT:

(a) carbon dioxide  
(b) methane  
(c) hydrogen  
(d) water vapours

Q. No.11. A scientist found dead fish in a lake. Their death may have been because of:

(a) greenhouse effect  
(b) acid rain  
(c) noise pollution  
(d) deforestation
Q. No.12. Identify the balanced chemical equation among the following.

(a) $3N_2 + H_2 \rightarrow 2NH_3$
(b) $N_2 + H_2 \rightarrow 2NH_3$
(c) $N_2 + 3H_2 \rightarrow 2NH_3$
(d) $N_2 + H_2 \rightarrow 2NH_3$

Q. No.13. Which one of the following is an example of chemical reaction?

(a) Evaporation
(b) Melting
(c) Condensation
(d) Burning

Q. No.14. When sulphuric acid is added to water in a beaker, the beaker becomes warm. This is an example of:

(a) exothermic reaction
(b) endothermic reaction
(c) decomposition reaction
(d) displacement reaction

Q. No.15. The colour of turmeric paper in basic solution becomes:

(a) yellow
(b) brown
(c) green
(d) red

Q. No.16. The device used to measure the strength of acids and bases is called:

(a) barometer
(b) altimeter
(c) metre rule
(d) pH meter

Q. No.17. Weight of an object is 600N, the area occupied by it on the ground is 1m$^2$. The pressure exerted by the object on the ground is:

(a) 600 N
(b) 600 W
(c) 600 Pa
(d) 600 J

Q. No.18. Gas pressure is used in the working of:

(a) Pneumatic drill
(b) Dynamo
(c) Generator
(d) Electric motor

Q. No.19. The pressure exerted by air is called:

(a) critical pressure
(b) atmospheric pressure
(c) absolute pressure
(d) water pressure

Q. No.20. The unit of length is:

(a) N
(b) sec
(c) kg
(d) m

Q. No.21. The correct reading on the given measuring cylinder is:

(a) 30 ml
(b) 40 ml
(c) 43 ml
(d) 57 ml

Q. No.22. The process of cooling an object causes thermal:

(a) contraction
(b) conductivity
(c) expansion
(d) transformation
Q. No.23. The liquid rises in thermometer because of:

(a) evaporation (b) condensation (c) contraction (d) expansion

Q. No.24. Solids contract on cooling because their particles:

(a) speed up (b) slow down (c) become smaller in size (d) disappear

Q. No.25. The type of lens shown in the diagram is:

(a) double convex (b) double concave (c) plano-convex (d) plano-concave

Q. No.26. A short-sighted person uses -------- to see distant objects clearly.

(a) concave lens (b) convex mirror (c) convex lens (d) concave mirror

Q. No.27. In the given figure, the lens is labelled as:

(a) W (b) X (c) Y (d) Z

Q. No.28. Which of the following semiconductor materials is most commonly used in electronics?

(a) Lead (b) Silicon (c) Tin (d) Germanium

Q. No.29. The energy generated by fission reaction is called:

(a) solar energy (b) wind energy (c) hydel energy (d) nuclear energy

Q. No.30. Which of the following is an example of output device used in computer?

(a) Printer (b) Mouse (c) Keyboard (d) Scanner

Q. No.31. Which one of the following is a benefit of space exploration?

(a) Cloning (b) Electronics (c) Locating minerals (d) Genetic engineering

Q. No.32. Which of the following is used to travel in space?

(a) Telescope (b) Helicopter (c) Aeroplane (d) Rocket