

# Meghalaya Board Class 10 Science Previous Year Question Paper

Total No. of Printed Pages—12

**X/18/S & T**

**2 0 1 8**

## **SCIENCE AND TECHNOLOGY**

**( CANDIDATES WITH PRACTICAL/INTERNAL ASSESSMENT )**

*Full Marks : 80*  
*Pass Marks : 24*

**( CANDIDATES WITHOUT PRACTICAL/INTERNAL ASSESSMENT )**

*Full Marks : 100*  
*Pass Marks : 30*

*Time : 3 hours*

( For Both Categories of Candidates )

*The figures in the margin indicate full marks for the questions*

*General Instructions :*

- (i) This question paper comprises of three Sections—A, B and C.
- (ii) The candidates are advised to attempt all the questions of Sections A, B and C separately.
- (iii) Marks allocated to every question are indicated against each.
- (iv) Question Nos. **1** to **39** are to be answered by both Regular and Private Candidates.
- (v) Question No. **40** is to be answered by Private Candidates (without Practicals) only.
- (vi) Regular Candidates should not answer Question No. **40**.

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SECTION—A

( **PHYSICS** )

( Marks : 26 )

Choose and write the correct answers from the following : 1×3=3

1. With respect to the object, the real image is
  - (a) slanted
  - (b) flat
  - (c) inverted
  - (d) erect 1
  
2. When a ray of light travels from a rarer medium to a denser medium obliquely
  - (a) it bends towards the normal
  - (b) it bends away from the normal
  - (c) it goes undeviated
  - (d) it is reflected back 1
  
3. The coil of the electric kettle is made of
  - (a) copper
  - (b) tungsten
  - (c) aluminium
  - (d) nichrome 1

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Answer the following questions in *one* word or *one* sentence each :

1×3=3

4. Define magnification of a lens. 1
5. Name the light sensitive and colour sensitive cells present in the retina of the human eye.  $\frac{1}{2}+\frac{1}{2}=1$
6. What is a magnetic field? 1

Answer the following short-answer type questions in 30–40 words each :

2×3=6

7. *Either*
- (a) State the laws of refraction of light. 2
- Or*
- (b) Define power of a lens. 1
- (c) Name the instrument used for measuring the power of a lens. 1
8. What is myopia? How is it corrected? 2
9. How much work is done in moving a charge of 3 C across two points having a potential difference 15 V? 2

Answer the following short-answer type questions in 50–60 words each :

3×3=9

10. Give the type of mirror which is used as a rear-view mirror in a car. Give two reasons. 1+2=3
11. (a) What is electric motor? 1
- (b) Explain the different ways to induce current in the coil. 2

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12.

*Either*

- (a) Name a substance used almost exclusively for making filaments of electric bulbs. 1
- (b) Name the factors affecting the resistance of a conductor.  $\frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2} = 2$

*Or*

- (c) Define resistivity of a substance. 1
- (d) Write the formula for equivalent resistance when three resistances  $R_1$ ,  $R_2$  and  $R_3$  are connected in parallel. 2

Answer the following long-answer type questions in 70–80 words : 5

13.

*Either*

- (a) What do you mean by electromagnetic induction? 1
- (b) What is earthing? Why is earthing of electrical appliances necessary?  $1 + 2 = 3$
- (c) A 200 W bulb is lighted for 2 hours. How much energy is consumed? 1

*Or*

- (d) Write any three differences between a convex lens and a concave lens. 3
- (e) Find the power of a concave lens of focal length 2 m. 2

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SECTION—B

( CHEMISTRY )

( Marks : 26 )

Choose and write the correct answers from the following : 1×3=3

**14.** Which of the following is a Bronsted-Lowry acid? 1

(a)  $\text{CO}_2$

(b)  $\text{SO}_2$

(c)  $\text{SO}_3$

(d)  $\text{H}_2\text{O}$

**15.** The organic compounds containing —CHO group are called

(a) ketone

(b) carboxylic acid

(c) aldehyde

(d) alcohol 1

**16.** Which of the following metals is the most abundant in the earth's crust?

(a) Iron

(b) Sodium

(c) Magnesium

(d) Aluminium 1

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Answer the following questions in *one* word or *one* sentence each :

1×2=2

**17.** What do you mean by the term metallurgy? 1

**18.** What is rancidity? 1

Answer the following short-answer type questions in 30–40 words each :

2×2=4

**19.** Why does the colour of copper (II) sulphate solution change, when an iron nail is dipped in it? 2

**20.** *Either*

(a) Write down two uses of sodium hydrogen carbonate. 1+1=2

*Or*

(b) What do you mean by the cracking of alkane? Name two types of cracking. 1+½+½=2

Answer the following short-answer type questions in 50–60 words each :

3×4=12

**21.** (a) Define displacement reaction. Give example. 1+1=2

(b) State Mendeleev's periodic law. 1

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22. (a) What are hydrocarbons? 1  
(b) Give the IUPAC name of  $\text{CH}_3\text{COOH}$ . 1  
(c) Write down the structural formula of methanoic acid. 1

23. What is meant by refining of metals? Name four methods commonly used for refining of impure metals.  $1+(\frac{1}{2}\times 4)=3$

24. *Either*

- (a) What do you mean by period and group in the periodic table?  $\frac{1}{2}+\frac{1}{2}=1$   
(b) How does the valency of an element change (i) on moving down a group and (ii) on moving from left to right in a period?  $1+1=2$

*Or*

- (c) What are monoacidic base and diacidic base? Give one example of each.  $1\frac{1}{2}+1\frac{1}{2}=3$

Answer the following long-answer type questions in 70–80 words : 5

25. *Either*

- (a) What is redox reaction? Give example. 2  
(b) What is neutralization? 1  
(c) Give any two uses of ethanoic acid. 2

*Or*

- (d) What are semimetals? Name any two semimetals. 2  
(e) What do you mean by ionization energy? What are the factors which determine the magnitude of ionization of energy?  $1+1+1=3$

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SECTION—C

( **BIOLOGY** )

( *Marks : 28* )

Choose and write the correct answers from the following : 1×3=3

**26.** Which of the following cells are formed in the bone marrow?

- (a) RBCs
- (b) Leucocytes
- (c) Leucocytes and RBC
- (d) Lymphocytes 1

**27.** Hormone which controls cellular metabolism is

- (a) adrenaline
- (b) insulin
- (c) thyroxine
- (d) testosterone 1

**28.** Bryophyllum plant produces vegetatively by

- (a) leaf bud
- (b) adventitious buds
- (c) root
- (d) stem 1



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Answer the following questions in *one* word or *one* sentence each :

1×3=3

**29.** Name the plant tissue concerned with transport of water and food materials. 1

**30.** Name the male and female reproductive whorl of a flower.  $\frac{1}{2}+\frac{1}{2}=1$

**31.** Define heredity. 1

Answer the following short-answer type questions in 20–30 words each :

2×4=8

**32.** Distinguish between breathing and respiration (any *two* points). 2

**33.** Name the structures that help in excretion in tapeworm, earthworm, cockroach and human beings.  $\frac{1}{2}\times 4=2$

**34.** *Either*

(a) Define photosynthesis. Write the overall reaction of photosynthesis. 1+1=2

*Or*

(b) What is reproduction? Name the different types of reproduction.  $1+\frac{1}{2}+\frac{1}{2}=2$

**35.** Differentiate between homologous and analogous organs. 1+1=2

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Answer the following short-answer type questions in 50–60 words each : 3×3=9

**36.** (a) Name the three major divisions of the human brain. Which is the most prominent part of the brain? 1½+½=2

(b) What do you mean by reflex action? 1

**37.** *Either*

(a) Differentiate any three points between aerobic and anaerobic respiration. 3

*Or*

(b) Differentiate between sensory and motor nerve cells. 1+1=2

(c) What is ultrafiltration? 1

**38.** Write the full form of AIDS. Write down any two preventive methods of AIDS. 1+2=3

Answer the following long-answer type questions in 70–80 words : 5

**39.** *Either*

(a) Write down any three digestive functions of liver. 3

(b) Differentiate between saprophytic and parasitic nutrition. 2

*Or*

(c) Why is blood red in colour? 1

(d) Give any four functions of lymph. 4

[ For Private Candidates (without Practicals) only ]

40. I. Answer any *three* of the following questions :  $2 \times 3 = 6$
- (a) Distinguish between real image and virtual image. 2
  - (b) What is a lens? Name the two types of lens.  $1 + \frac{1}{2} + \frac{1}{2} = 2$
  - (c) Define electric power. State its SI unit.  $1 + 1 = 2$
  - (d) What are conductors? Give two examples.  $1 + 1 = 2$
  - (e) What do you mean by atmospheric refraction? 2
- II. Answer any *three* of the following questions :  $2 \times 3 = 6$
- (a) What is decomposition reaction? Give an example.  $1 + 1 = 2$
  - (b) (i) Define activity series of metals. 1
  - (ii) Name the metal having the highest melting point and lowest melting point.  $\frac{1}{2} + \frac{1}{2} = 1$
  - (c) Give two uses of sodium carbonate. 2
  - (d) Which process are used for the enrichment of (i) sulphide ores and (ii) oxide ores?  $1 + 1 = 2$
  - (e) (i) Name two allotropes of carbon.  $\frac{1}{2} + \frac{1}{2} = 1$
  - (ii) Write down the IUPAC name of  $C_2H_5OH$ . 1
- III. Answer any *four* of the following questions :  $2 \times 4 = 8$
- (a) Differentiate between self-pollination and cross-pollination. 2
  - (b) What is excretion? Name any two nitrogenous wastes products.  $1 + \frac{1}{2} + \frac{1}{2} = 2$

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- (c) Differentiate between systemic circulation and pulmonary circulation. 1+1=2
- (d) Write down the differences between dominant gene and recessive gene. 1+1=2
- (e) Give two examples of reflex actions in our daily life activities. 1+1=2
- (f) Name the following :
- (i) Small openings present on the leaf surface 1
- (ii) The duct which carries urine from urinary bladder to outside the body 1

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