

# Sample Paper 1

Class X 2022-23

Science (086)

Time: 3 Hours

Max. Marks: 80

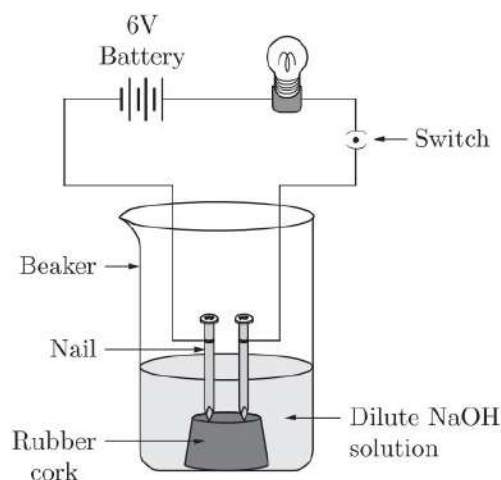
## General Instructions:

1. This question paper consists of 39 questions in 5 sections.
2. All questions are compulsory. However, an internal choice is provided in some questions. A student is expected to attempt only one of these questions.
3. Section A consists of 20 Objective Type questions carrying 1 mark each.
4. Section B consists of 6 Very Short questions carrying 02 marks each. Answers to these questions should be in the range of 30 to 50 words.
5. Section C consists of 7 Short Answer type questions carrying 03 marks each. Answers to these questions should be in the range of 50 to 80 words.
6. Section D consists of 3 Long Answer type questions carrying 05 marks each. Answer to these questions should be in the range of 80 to 120 words.
7. Section E consists of 3 source-based/case-based units of assessment of 04 marks each with sub-parts.

## SECTION-A

Select and write one most appropriate option out of the four options given for each of the questions 1 – 20.

1. In an attempt to demonstrate electrical conductivity through an electrolyte, the following apparatus (figure) was set up.



Which among the following statement (s) is (are) correct?

1. Bulb will not glow because electrolyte is not acidic.
2. Bulb will glow because NaOH is a strong base and furnishes ions for conduction.
3. Bulb will not glow because circuit is incomplete.
4. Bulb will not glow because it depends upon the type of electrolytic solution.

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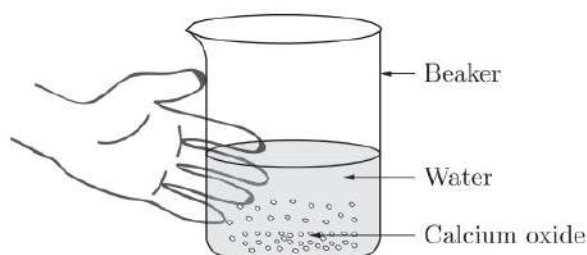
- (a) 1 and 3
- (b) 2 and 4
- (c) Only 2
- (d) Only 4

2. The following reaction is an example of a  
 $4\text{NH}_3(\text{g}) + 5\text{O}_2(\text{g}) \longrightarrow 4\text{NO}(\text{g}) + 4\text{H}_2\text{O}(\text{g})$

- 1. displacement reaction
- 2. combination reaction
- 3. redox reaction
- 4. neutralisation reaction

- (a) 1 and 4
- (b) 2 and 3
- (c) 1 and 3
- (d) 3 and 4

3. Calcium oxide reacts vigorously with water.



Which of the following is the incorrect observation of the reaction shown in the above set up?

- (a) It is an endothermic reaction.
- (b) Slaked lime is produced.
- (c) It is an exothermic reaction.
- (d) It is a combination reaction.

4.  $\text{N}_2 + 3\text{H}_2 \longrightarrow 2\text{NH}_3$

With the reference of above reaction which one of the option in the table is correct?

	Reactants	Products
(a)	$\text{N}_2, \text{H}_2$	$\text{NH}_3$
(b)	$\text{NH}_3$	$\text{N}_2, \text{H}_2$
(c)	$\text{N}_2$	$\text{H}_2, \text{NH}_3$
(d)	$\text{N}_2\text{NH}_3$	$\text{H}_2$

5. Which one of the following properties is not general exhibited by ionic compounds?

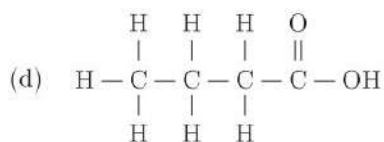
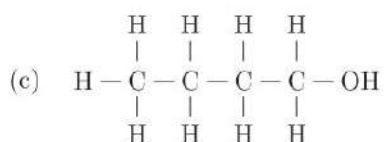
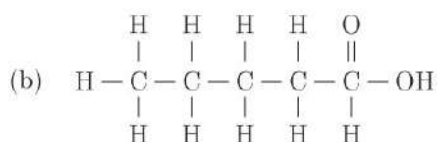
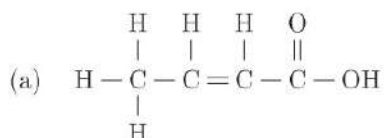
- (a) Solubility in water
- (b) Electrical conductivity in solid state
- (c) High melting and boiling points
- (d) Electrical conductivity in molten state

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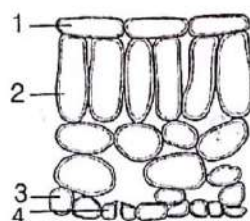
6. A student require hard water for an experiment in his laboratory which is not available in the neighbouring area. In the laboratory there are some salts, which when dissolved in distilled water can convert it into hard water. Select from the following groups of salts, a group, each salt of which when dissolved in distilled water will make it hard.

- (a) Sodium chloride, Potassium chloride
- (b) Sodium sulphate, Potassium sulphate
- (c) Sodium sulphate, Calcium sulphate
- (d) Calcium sulphate, Calcium chloride

7. The correct structural formula of butanoic acid is



8. The diagram shows the arrangement of cells inside the leaf of a green plant. (No cell contents are shown).

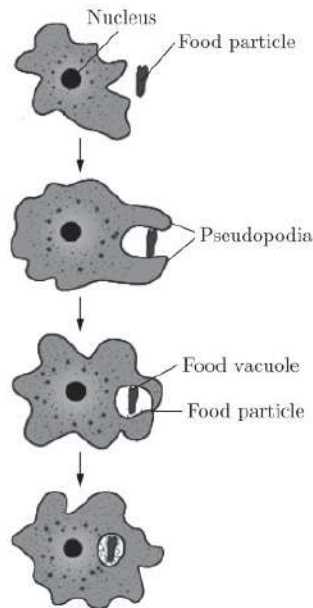


Which of the following cells normally contain chloroplasts?

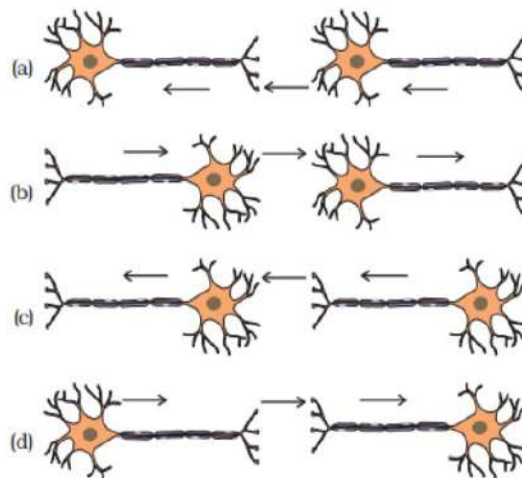
- (a) 2 and 4
- (b) 2 and 3
- (c) 1 and 2
- (d) 1 and 4

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9. Identify the micro-organism whose nutrition type is shown below :



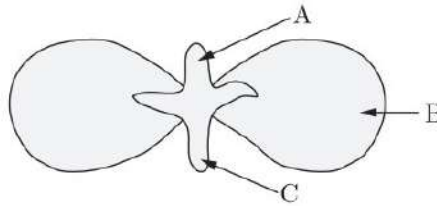
- (a) Food bacteria
  - (b) Yeast
  - (c) Fungus
  - (d) Amoeba
10. Structure present in a cell which is responsible for determination of the sex of a baby is :
- (a) cytoplasm
  - (b) cell membrane
  - (c) nucleus
  - (d) chromosome
11. What is the correct direction of flow of electrical impulses ?



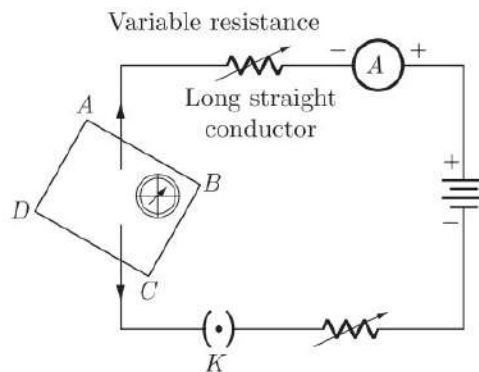
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12. In following diagram the parts A, B and C are sequentially



- (a) cotyledon, plumule and radicle
  - (b) plumule, radicle and cotyledon
  - (c) plumule, cotyledon and radicle
  - (d) radicle, cotyledon and plumule
13. At the time of short circuit, the electric current in the circuit :
- (a) vary continuously
  - (b) does not change
  - (c) reduces substantially
  - (d) increases heavily
14. If the key in the arrangement taken out (the circuit is made open) and magnetic field lines are drawn over the horizontal plane *ABCD*, the lines are

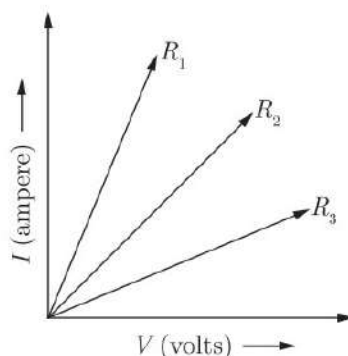


- (a) concentric circles
- (b) elliptical in shape
- (c) straight lines parallel to each other
- (d) concentric circles near the point *O* but of elliptical shapes as we go away from it.

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15. A student carries out an experiment and plots the  $V$ - $I$  graph of three samples of nichrome wire with resistances  $R_1$ ,  $R_2$  and  $R_3$  respectively (Figure). Which of the following is true ?



- (a)  $R_1 = R_2 = R_3$       (b)  $R_1 > R_2 > R_3$   
 (c)  $R_3 > R_2 > R_1$       (d)  $R_2 > R_3 > R_1$
16. Which of the following statement is not correct about the magnetic field?  
 (a) Magnetic field lines form a continuous closed curve.  
 (b) Magnetic field line do not interest each other.  
 (c) Direction of tangent at any point on the magnetic field line curve gives the direction of magnetic field at that point.  
 (d) Outside the magnet, magnetic field lines go from South to North pole of the magnet.

Question no. 17 to 20 are Assertion-Reasoning based questions.

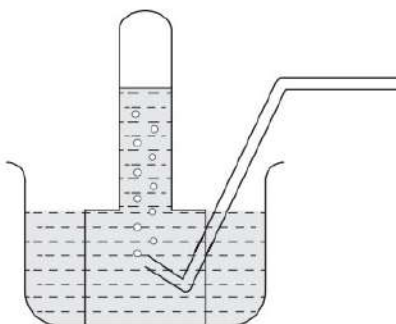
17. **Assertion :** Corrosion of iron is a serious problem.  
**Reason :** Every year an enormous amount of money is spent to replace damaged iron.  
 (a) Both Assertion and Reason are True and Reason is the correct explanation of the Assertion.  
 (b) Both Assertion and Reason are True but Reason is not the Correct explanation of the Assertion.  
 (c) Assertion is True but the Reason is False.  
 (d) Both Assertion and Reason are False.
18. **Assertion :** Dominant allele is an allele whose phenotype expresses even in the presence of another allele of that gene.  
**Reason :** It is represented by a capital letter, e.g. T.  
 (a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).  
 (b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).  
 (c) Assertion (A) is true but reason (R) is false.  
 (d) Assertion (A) is false but reason (R) is true.
19. **Assertion :** All the plants possess autotrophic mode of nutrition.  
**Reason :** Due to the presence of green coloured pigment chlorophyll in them.  
 (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion.  
 (b) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion.  
 (c) Assertion is true but Reason is false.  
 (d) Both Assertion and Reason are false.

20. **Assertion :** The magnetic field produced by a current carrying solenoid is independent of its length and cross-section area.  
**Reason :** The magnetic field inside the solenoid is uniform.
- (a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).  
(b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).  
(c) Assertion (A) is true but reason (R) is false.  
(d) Assertion (A) is false but reason (R) is true.

## SECTION-B

Question no. 21 to 26 are very short answer questions.

21. A metal is treated with dil  $H_2SO_4$ , the gas evolved is collected by the method shown in the figure. Answer the following :
- (i) Name the gas.  
(ii) Name the method of collection of the gas.



or

List any two observations when a highly reactive metal is dropped in water.

22. What do you mean by diffusion ?
23. Which are the first simple molecules of food produced during photosynthesis ? What happens to these simple molecules in the leaves later ?
24. What is the meaning of the term "assimilation" ?
25. Draw a neat diagram to show the refraction of a light ray through a glass prism and label on it the angle of incidence and angle of deviation.
- or
- What is the scattering of light ? Explain with the help of an example.
26. What will happen to the garbage and dead animals and plants in absence of microorganisms ?

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## SECTION-C

Question no. 27 to 33 are short answer questions.

27. State which of the following chemical reactions will take place or not, giving suitable reason for each :

- (i)  $\text{Zn(s)} + \text{CuSO}_4(\text{aq}) \rightarrow \text{ZnSO}_4(\text{aq}) + \text{Cu(s)}$
- (ii)  $\text{Fe(s)} + \text{ZnSO}_4(\text{aq}) \rightarrow \text{FeSO}_4(\text{aq}) + \text{Zn(s)}$
- (iii)  $\text{Zn(s)} + \text{FeSO}_4(\text{aq}) \rightarrow \text{ZnSO}_4(\text{aq}) + \text{Fe(s)}$

28. Give reasons for the following :

- (i) Shining surfaces of metals become dull on exposure to air and moisture.
- (ii) Aluminium is extracted from its ore by electrolysis of molten ore.
- (iii) Gold is available in the native state.

29. Mention the three kinds of cells present in blood. Write one function of each.

or

With the help of diagram explain how exchange of gases occurs in leaf of a plant.

30. Manju is uses a concave mirror for image formation for different positions of an object. What inferences can be drawn about the following when an object is placed at a distance of 10 cm from the pole of a concave mirror of focal length 15 cm ?

- (a) Position of the image
- (b) Size of the image
- (c) Nature of the image

Draw a labelled ray diagram to justify your inferences.

31. (a) Define optical centre of a spherical lens.  
(b) You are given a convex lens of focal length 30 cm. Where would you place an object to get a real, inverted and highly enlarged image of the object ? Draw a ray diagram showing the image formation.  
(c) A concave lens has a focal length of 20 cm. At what distance should an object be placed so that it forms an image at 15 cm away from the lens ?

32. Pawan is connected a galvanometer with a coil of insulated copper wire .What would happen if a bar magnet is :

- (i) Pushed into the coil ?
- (ii) Withdrawn from inside the coil ?
- (iii) Held stationary inside the coil ?

or

You are given two identical looking iron bars. Just using these two bars how will you identify whether any or both of these bars is/are a magnet ?

33. Explain the phenomenon of Biological Magnification. How does it affect organisms belonging to different trophic levels particularly the tertiary consumers ?

## SECTION-D

Question no. 34 to 36 are Long answer questions.

34. An organic compound *A* is widely used as a preservative in pickles and has a molecular formula  $\text{C}_2\text{H}_4\text{O}_2$ . This compound reacts with ethanol to form a sweet smelling compound *B*.

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- (a) Identify the compound *A*.  
 (b) Write the chemical equation for the reaction with ethanol to form compound *B*.  
 (c) How can we get compound *A* from *B*?  
 (d) Name the process and write corresponding chemical equation.  
 (e) Which gas is produced when compound *A* reacts with washing soda? Write the chemical equation.

or

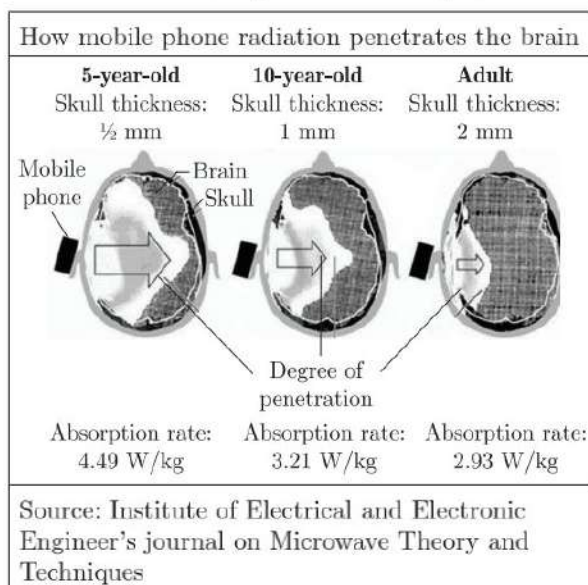
- (a) The formula of an ester is  $\text{CH}_3\text{COOC}_2\text{H}_5$ . Write the structural formulae of the corresponding alcohol and the acid.  
 (b) (i) Mention the experimental conditions involved in obtaining ethene from ethanol.  
 (ii) Write the chemical equation for the above reaction.

35. (a) Write the function of following parts in human female reproductive system :  
 (i) Ovary  
 (ii) Oviduct  
 (iii) Uterus  
 (b) Describe in brief the structure and function of placenta.

or

Define the terms :

- (i) Syngamy  
 (ii) Triple fusion  
 (iii) Implantation  
 (iv) Placenta  
 (v) Gestation.
36. The mobile phone is an excellent communication device. Mobile phones use electromagnetic radiation in the microwave range. Part of the radio wave emitted by the mobile phone handset will be absorbed by the head. Head is in the 'near field' of radiation, so that most of the heating effect occurs in the head. Temperature in the internal ear, brain increases by 1 degree or more. This adversely affects the functioning of these organs since these have fluid filled cavities. But prolonged heating effect can alter brain functions and hearing ability also. Other harmful effects such as Premature Cataract, Confusion and loss of memory may also be possible. Following figure shows that how mobile phone radiation penetrates the brain.



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- (i) What precautions should be taken while using mobile phones ?
- (ii) Which radiations are used in mobile phones ?
- (iii) How does prolonged heating effect due to mobile radiations can effect adversely ?
- (iv) In which part of our body, most of the heating effect occurs due to use of mobiles ?

## SECTION-E

Question no. 37 to 39 are case-based/data -based questions with 2 to 3 short sub-parts. Internal choice is provided in one of these sub-parts.

37. The reactivity series is a list of metals arranged in the order of their decreasing activities. The metal at the top of the reactivity series is the most reactive and metal at the bottom is the least reactive. The more reactive metal displaces less reactive metal from its salt solution.

K	Potassium	More reactive
Na	Sodium	
Ca	Calcium	
Mg	Magnesium	
Al	Aluminium	
Zn	Zinc	Reactivity decreases.
Fe	Iron	Least reactive
Pb	Lead	
[H]	[Hydrogen]	
Cu	Copper	
Hg	Mercury	
Ag	Silver	
Au	Gold	

- (i) Name the metals which react with steam but not with hot water.
- (ii) What happen when calcium react with nitric acid and which method is used to extract metal present at the top of the reactivity series?

**or**

- (ii) Which of the following metals exist in their native states in nature?
  - I. Cu
  - II. Au
  - III. Zn
  - IV. Ag

38. Question numbers i - iv are based on the table given below. Study the table and answer the following questions.

**Table-A**

	Characters	Males	Females
1.	Total no. of chromosomes	23 pairs	23 pairs
2.	No. of autosome	22 pairs	22 pairs
3.	No. of sex chromosome	1 pair	1 pair

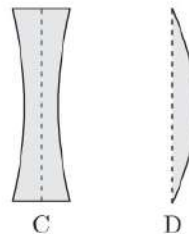
- (i) What is sex determination?
- (ii) What are the sex chromosomes in the males?

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- (iii) What are the sex chromosomes in the females?
- or**
- (iv) Is the father responsible for the sex of the child?

**39.** Lenses are objects made of transparent materials such as glass or clear plastic that has curved surfaces. Diverging lenses are thicker at their edges than at their centres and makes light rays passing through them spread out. Converging lenses are thicker in their middle than at their edges and make light rays passing through them focus at a point. These are used in spectacles to help people with poor vision see better. The converging lenses magnify by bending the rays of light that pass through them to meet at a point called focus. Thicker the converging lens is at its centre, the more it magnifies and closer the focus is to the lens.

- (i) Ravi uses two lenses A and B of same size and same material as shown.  $P_1$  and  $P_2$  are the powers of A and B. An object is kept at the same distance from the lens between F and 2F of each lens on the principal axis in turn. Let  $I_1$  and  $I_2$  be the image formed by two lenses respectively. What is the relation of image distances of both lens ?
- (ii) Write down the relation between the power of lens of both lenses ?
- (iii) Meenakshi uses above two lenses A and B along with another two lenses C and D, as shown :



She is able to see the subject matter on the black board while sitting in the front row in the classroom but is unable to see the same matter while sitting in the last row.  
Which of the above four lenses will she require to correct the defect in her vision? Why ?

**or**

- (iv) Natasha places an object on the principal axis of above given lens A. One end of this object coincides with the focus F and the other end with 2F. What will be the nature of the image formed by the lens on the other side ?

□□□□□□□

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# Sample Paper 2

Class X 2022-23

Science (086)

Time: 3 Hours

Max. Marks: 80

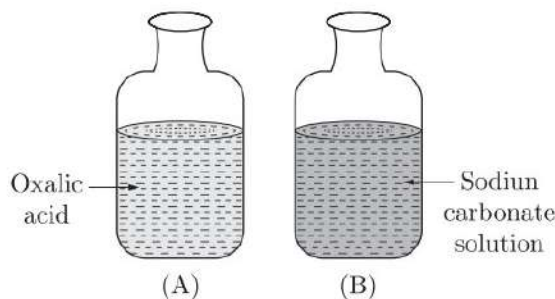
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## SECTION-A

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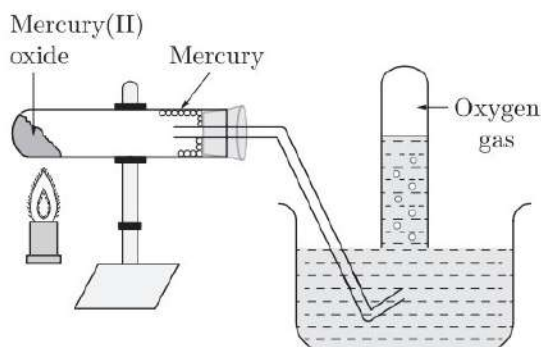
1. When pH strip is dipped in each bottle, the colour shown by bottle *A* and *B* will be respectively:



- (a) orange, blue  
(b) blue, orange  
(c) green, blue  
(d) blue, green
2. Complete the following chemical reaction with correct option:  
$$\text{Pb}(\text{NO}_3)_2 + 2\text{KI} \longrightarrow \dots\dots\dots + 2\text{KNO}_3$$
- (a)  $\text{PbI}_2$   
(b)  $\text{PbNO}_3$   
(c)  $\text{Pb}(\text{NO}_3)_2$   
(d)  $\text{PbIO}_3$

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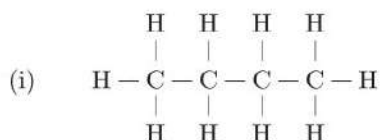
3. The given diagram represents a ..... reaction.



- (a) Thermal decomposition  
 (b) Displacement  
 (c) Double displacement  
 (d) Combination
4.  $\text{CuO} + \text{H}_2 \longrightarrow \text{Cu} + \text{H}_2\text{O}$   
 Which of the following pair is correct regarding to oxidation and reduction?

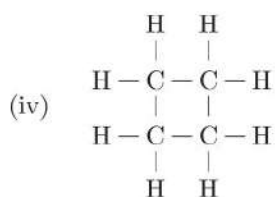
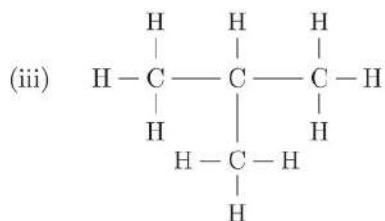
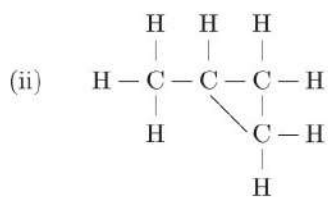
	Oxidation	Reduction
(a)	CuO	$\text{H}_2$
(b)	$\text{H}_2$	CuO
(c)	$\text{H}_2\text{O}$	$\text{H}_2$
(d)	$\text{H}_2$	$\text{H}_2\text{O}$

5. Ionic compound have high melting point due to  
 (a) Strong force of attraction between oppositely charged ions.  
 (b) Less force of attraction between oppositely charged ions.  
 (c) Strong force of attraction between similar charged ions.  
 (d) None of these
6. Which of the following substances will not give carbon dioxide on treatment with dilute acid?  
 (a) Marble  
 (b) Limestone  
 (c) Baking soda  
 (d) Lime
7. Which of the following are correct structural isomers of butane ?



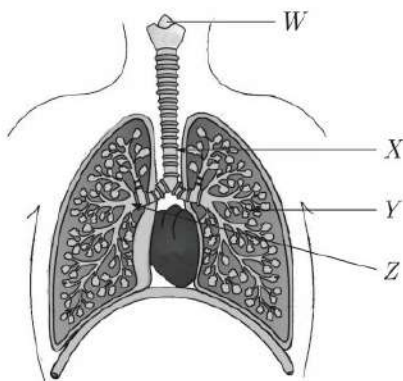
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- (a) (i) and (iii)
- (b) (i) and (ii)
- (c) (ii) and (iv)
- (d) (iii) and (iv)

8. The diagram shows part of the human gas exchange system.



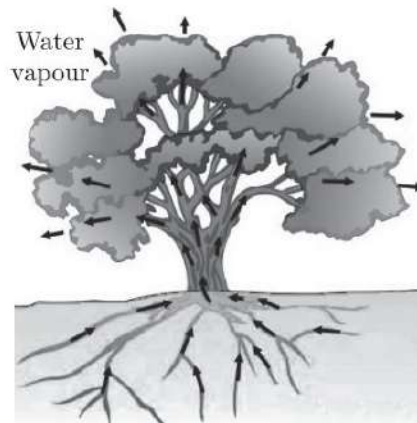
Here, W, X, Y and Z are?

	Bronchus	Bronchiole	Larynx	Trachea
(a)	W	X	Z	Y
(b)	X	Z	Y	W
(c)	Y	W	X	Z
(d)	Z	Y	W	X

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9. Which process is shown by the following picture?

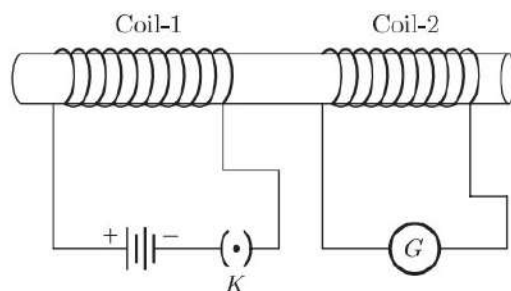


- (a) Movement of food during photosynthesis in a tree
  - (b) Movement of water during transpiration in a tree
  - (c) Movement of minerals during in a tree
  - (d) Movement of carbon dioxide during in a tree
10. Each gamete carries only one allele. This is proposed in which law ?
- (a) law of dominance
  - (b) law of segregation
  - (c) law of genetics
  - (d) law of assortment
11. Which of the following statements about transmission of nerve impulse is incorrect ?
- (a) Nerve impulse travels from dendritic end towards axonal end.
  - (b) At the dendritic end electrical impulses bring about the release of some chemicals which generate an electrical impulse at the axonal end of another neuron.
  - (c) The chemicals released from the axonal end of one neuron cross the synapse and generate a similar electrical impulse in a dendrite of another neuron.
  - (d) A neuron transmits electrical impulses not only to another neuron but also to muscle and gland cells.
12. The reproductive life of a woman lasts from hacreem to spauoemen
- (a) reproductive life a woman lasts from menarche to menopause.
  - (b) reproductive life a woman lasts from menarche to menopause.
  - (c) reproductive life a woman lasts from chenmare to pausemeno.
  - (d) reproductive life a woman lasts from chenmare to usemenopa.
13. Electrical resistivity of a given metallic wire depends upon
- (a) its length
  - (b) its thickness
  - (c) its shape
  - (d) nature of the material

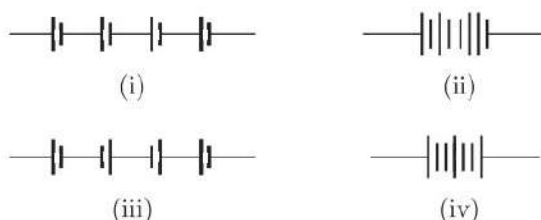
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14. In the arrangement shown in Figure, there are two coils wound on a non-conducting cylindrical rod. Initially the key is not inserted. Then the key is inserted and later removed. Then



- (a) the deflection in the galvanometer remains zero throughout
  - (b) there is a momentary deflection in the galvanometer but it dies out shortly and there is no effect when the key is removed
  - (c) there are momentary galvanometer deflections that die out shortly; the deflections are in the same direction.
  - (d) there are momentary galvanometer deflection that die out shortly; the deflections are in opposite directions
15. The proper representation of series combination of cells (Figure) obtaining maximum potential is



- (a) (i)
  - (b) (ii)
  - (c) (iii)
  - (d) (iv)
16. Which of the following factors affect the strength of force experience by a current carrying conductor in a uniform magnetic field?
- (a) magnetic field strength
  - (b) magnitude of current in a conductor
  - (c) length of the conductor within magnetic field
  - (d) All of above.

Question no. 17 to 20 are Assertion - Reasoning based questions.

17. **Assertion :** When iron nail is dipped in copper sulphate solution, the iron nail becomes brownish in colour and the blue colour of copper solution fade.  
**Reason :** Equation representing this change is  $Cu + FeSO_4 \longrightarrow CuSO_4 + Fe$
- (a) Both Assertion and Reason are True and Reason is the correct explanation of the Assertion.
  - (b) Both Assertion and Reason are True but Reason is not the Correct explanation of the Assertion.
  - (c) Assertion is True but the Reason is False.
  - (d) Both Assertion and Reason are False.

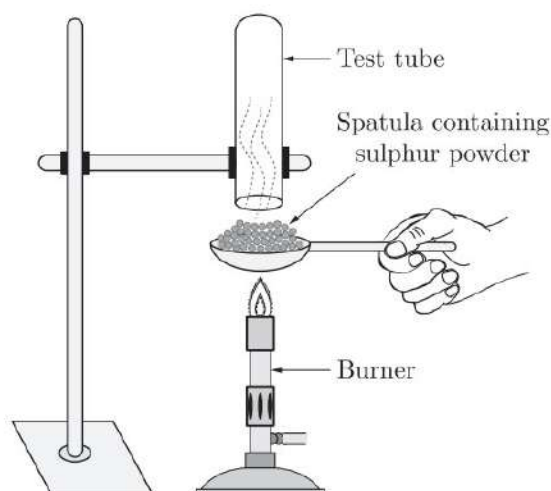
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18. **Assertion :** Chromosomes are known as hereditary vehicles.  
**Reason :** The chromosomes are capable of self-reproduction and maintaining morphological and physiological properties through successive generations.
- (a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).
  - (b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).
  - (c) Assertion (A) is true but reason (R) is false.
  - (d) Assertion (A) is false but reason (R) is true.
19. **Assertion :** Ethanol is obtained during the anaerobic process of respiration.  
**Reason :** This is due to presence of oxygen and it takes place in the mitochondria.
- (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion.
  - (b) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
  - (c) Assertion is true but Reason is false.
  - (d) Both Assertion and Reason are false.
20. **Assertion :** A current carrying conductor experiences a force in a magnetic field.  
**Reason :** The force acting on a current carrying conductor in a magnetic field is due to interaction between magnetic field produced by the current carrying conductor and external magnetic field in which the conductor is placed.
- (a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).
  - (b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).
  - (c) Assertion (A) is true but reason (R) is false.
  - (d) Assertion (A) is false but reason (R) is true.

## SECTION-B

Question no. 21 to 26 are very short answer questions.

21. Pratyush took sulphur powder on a spatula and heated it. He collected the gas evolved by inverting a test tube over it as shown in Figure below :
- (a) What will be the action of gas on
    - (i) dry litmus paper ?
    - (ii) moist litmus paper ?



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or

Write some uses of metals which are based on the properties of malleability and ductility.

22. (a) What will happen to the guard cells and stomatal pore when water flows to guard cells ?  
(b) How do plants transmit informations from cell to cell ?
23. What is the compensation point with relation to the release of  $\text{CO}_2$  by the plants ?
24. What is the cause of peptic ulcer ?
25. A person is not able to see distinctly the objects placed beyond 90 cm from him. Giving reasons to identify the defect in his eye. Determine the nature of lens used to correct this defect.

or

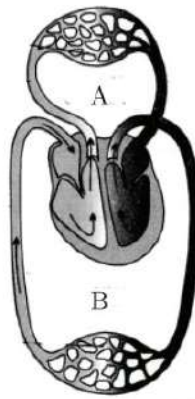
A star appears on the horizon. What is the true position of the star ? Explain with the help of a diagram.

26. "Energy flow in a food chain is unidirectional." Justify this statement.

## SECTION-C

Question no. 27 to 33 are short answer questions.

27. Identify the type of each of the following reactions stating reason for your answers :
- (a)  $\text{Fe}_2\text{O}_3 + 2\text{Al} \rightarrow \text{Al}_2\text{O}_3 + 2\text{Fe} + \text{heat}$   
(b)  $\text{Pb}(\text{NO}_3)_2 + 2\text{KI} \rightarrow \text{PbI}_2 + 2\text{KNO}_3$   
(c)  $\text{ZnCO}_3 \xrightarrow{\text{heat}} \text{ZnO} + \text{CO}_2$
28. Explain the following statements :
- (a) Most metal oxides are insoluble in water but some of these dissolve in water. What are these oxides and their solutions in water called ?  
(b) At ordinary temperature the surface of metals such as magnesium, aluminium, zinc etc., is covered with a thin layer. What is the composition of this layer ? State its importance.  
(c) Some alkali metals can be cut with a knife.
29. Study the picture carefully and answer the following:



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- (a) What does diagram given below depict?
- (b) What are A and B ?
- (c) Which vessel carried deoxygenated blood to lungs and which vessel brings oxygenated blood from lungs to heart ?

or

How does small intestine tissues help the digestion of fats, protein and starch?

30. (a) State the relationship between focal length and radius of curvature of a spherical mirror.  
(b) Why is the refractive index of a medium always greater than one ?  
(c) A lens has  $-4\text{ D}$  power. Is the lens concave or convex ?
31. (a) Define power of a lens and write its S.I. unit.  
(b) A convex lens of power  $4\text{ D}$  is placed at a distance of  $40\text{ cm}$  from a wall. At what distance from the lens should a candle be placed so that its image is formed on the wall ?
32. A shining metal  $M$ , of burning gives a dazzling white flame and changes to a white powder  $N$ .  
(a) Identify  $M$  and  $N$ .  
(b) Represent the above reaction in the form of a balanced chemical equation.  
(c) Does  $M$  undergo oxidation or reduction in this reaction ? Justify.

or

Write the equations for the following metals which are obtained from their compounds by reduction process.

- (a) Metal  $X$  which is low in reactivity series.
  - (b) Metal  $Y$  which is in middle of series.
33. Larger animals kill the smaller animals in the forest, eat whatever they can, leave the rest in the forest but the forest is never found full of dead animals. What happens to the bodies of these dead animals?

## SECTION-D

Question no. 34 to 36 are Long answer questions.

34. Soaps and detergents are both types of salts. State the difference between the two. Write the mechanism of the cleaning action of soap. Why do soaps not form lather with hard water ? Mention any two problems that arise due to the use of detergents instead of soaps.

or

An organic compound with molecular formula  $\text{C}_2\text{H}_4\text{O}_2$ , produces brisk effervescence on addition of sodium carbonate bicarbonate.

- (a) Identify the organic compound
  - (b) Name the gas evolved.
  - (c) How will you test the gas evolved ?
  - (d) Write a chemical equation for the above reaction.
  - (e) List two important uses of the above compound.
35. (a) Differentiate between germination and fertilization.  
(b) State in brief the functions of the following parts of the human male reproductive system :  
(i) Scrotum  
(ii) Testes  
(iii) Vas deferens

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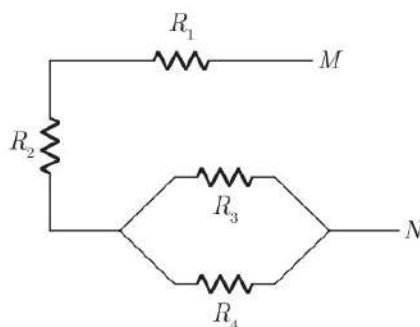
or

- (a) Draw a neat diagram to show fertilization in a flower and label on it the following parts :  
 (i) Stigma  
 (ii) Pollen tube  
 (iii) Ovary

State the function of pollen tube.

- (b) List in tabular form any two differences between a male gamete and a female gamete.

36. (a) For the combination of resistors shown in the following figure, find the equivalent resistance between  $M$  and  $N$ .



- (b) State Joule's law of heating.  
 (c) Why we need a 5 A fuse for an electric iron which consumes 1 kW power at 220 V?  
 (d) Why is it impracticable to connect an electric bulb and an electric heater in series?

### SECTION-E

Question no. 37 to 39 are case-based/data -based questions with 2 to 3 short sub-parts. Internal choice is provided in one of these sub-parts.

37. Sample of four metals P, Q, R and S were taken and added to the following solution one by one. The results obtained have been tabulated as follows.

Metal	FeSO <sub>4</sub>	CuSO <sub>4</sub>	ZnSO <sub>4</sub>	AgNO <sub>3</sub>
P	No reaction	Displacement	.....	.....
Q	Displacement		No reaction	Displacement
R	No reaction	No reaction	No reaction	
S	No reaction	No reaction	No reaction	No reaction

- (i) Which is the most reactive metal ?  
 (ii) What would you observe if Q is added to a solution of CuSO<sub>4</sub>. Also, what is the colour change when Q is added to FeSO<sub>4</sub>.

or

What do you mean by displacement reaction ?

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38. Question numbers i - iv are based on the table given below. Study the table and answer the following questions.

**Table-A**

S. No.	Generation	Phenotypic ratio
1.	F <sub>1</sub> generation	23 pairs
2.	F <sub>2</sub> generation	22 pairs

- (i) State the law of dominance.  
 (ii) What is the dominant allele?  
 (iii) Define the term phenotype.

or

- (iv) What is the meaning of genotype ?

39. A concave mirror forms image of an object thrice in its size on a screen. Magnification of a mirror gives information about the size of the image relative to the object. It is defined as the ratio of size of image to the size of object. It is represented by  $m$ .

$$m = \frac{\text{Size of image}}{\text{Size of object}}$$

Sign of magnification by mirror gives the information about the nature of the image produce by it.

- (i) Describe the nature of image formed.  
 (ii) If the object  $x$  distance from the pole of mirror, then find image distance from the pole.  
 (iii) If the radius of curvature of mirror is R, then write the relation between object distance, image distance and focal length of the mirror.

or

- (iv) Give one use of concave mirror.

□□□□□□

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## Sample Paper 2

Class X Exam 2022-23

English-Language and Literature (184)

Time Allowed : 3 Hrs.

Maximum Marks: 80

### General Instructions:

- 15-minute prior reading time allotted for Q-paper reading.
- The Question Paper contains THREE sections READING, GRAMMAR & WRITING and LITERATURE.
- Attempt question based on specific instructions for each part.

### SECTION A- READING SKILLS 20

#### I. Read the passage given below. 10

- Over the past few decades, research has revealed a great deal of information about how readers get meaning from what they read and about the kinds of instructional activities and procedures that are most successful in helping students to become good readers. For many years, reading instruction was based on a concept of reading as the application of a set of isolated skills such as identifying words, finding main ideas, identifying cause and effect relationships, comparing and contrasting and sequencing. Comprehension was viewed as the mastery of these skills.
- One important classroom study conducted during the 1970s found that typical comprehension instruction followed what the study called a mentioning, practicing, and assessing procedure. That is, teachers mentioned a specific skill that students were to apply, had students practice the skill by completing workbook pages, then assessed them to find out if they could use the skill correctly. Such instruction did little to help students learn how or when to use the skills, nor was it ever established that this particular set of skills enabled comprehension.
- At about this time, a group of psychologists, linguists, and computer scientists began to focus research attention on how the mind works — how people think and learn. A goal of this new research movement, called cognitive science, was to produce an applied science of learning.
- In the field of reading, a number of cognitive scientists focused their attention on how readers construct meaning as they read. Specifically, they studied the mental activities that good readers engage in to achieve comprehension. From these studies an entirely new concept emerged about what reading is. According to the new concept, reading is a complex, active process of constructing meaning - not skill application.

The act of constructing meaning is :

**Interactive** - it involves not just the reader but also the text and the context in which reading takes place.

**Strategic** - readers have purposes for their reading and use a variety of strategies and skills as they construct meaning.

**Adaptable** - readers change the strategies they use as they read different kinds of text or as they read for different purposes.

- While cognitive science research was producing valuable information about comprehension processes, reading education researchers were reporting important findings about what comprehension instruction looks like in the most effective reading classrooms.
- The convergence of these strands of research has provided a wealth of information about what good readers do as they read, about how good and poor readers differ, and about the kind of instruction that is needed to help students to become good readers.

**Based on your understanding of the passage, answer the questions given below.**

- Which of the following is not a procedure that followed a typical comprehension instruction during the 1970s, as revealed after a classroom study done by researchers ?
  - practicing procedure
  - mentioning procedure
  - memorisation procedure
  - assessing procedure
- A number of cognitive scientists, in the field of reading, focused their attention on :
  - how much an average reader can read in a day.
  - learning why many people preferred learning through reading.
  - learning why readers had a much better knowledge of vocabulary than others.
  - how readers construct meaning as they read.

- iii. Supply 1 point to justify the following:  
Readers change the strategies they use.
- iv. Select the appropriate option to fill in the blanks:  
According to the new concept of reading, reading is not \_\_\_\_\_ but a complex, active process of constructing meaning.
- an insignificant expertise
  - a comprehension skill
  - a skill application
  - a preferred ability
- v. The act of constructing meaning is :
- Comprehensive
  - Adaptable
  - Strategic
  - Interactive
- I, II and III
  - I, III and IV
  - II, III and IV
  - I, II, III and IV
- vi. Which instruction gave no help to the students to learn how or when to use certain skills nor was it ever established that this particular set of skills enabled comprehension?
- vii. State whether the following statement is TRUE or FALSE:  
In the late 20th century a group of psychologists, linguists, and computer scientists began to focus research attention on how the mind works i.e. how people think and learn.
- viii. Complete the following analogy correctly with a word/phrase from paragraph 3:  
bow : obeisance :: objective : \_\_\_\_\_  
(Clue : A bow is a synonym for an obeisance, similarly an objective is a synonym for a...)
- ix. Choose an option that clearly states the meaning of the word 'convergence'.
- two or more things become similar or come together
  - two thoughts or things going parallelly
  - the emergence of new and distinct thoughts or patterns
  - the violent mixing of two or more things
- x. For many years, reading instruction was based on a concept of reading as the application of a set of

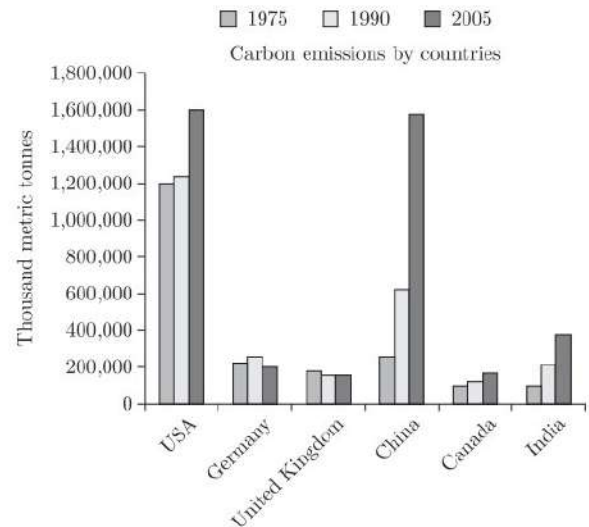
isolated skills.

List any two such isolated skills.

- \_\_\_\_\_
- \_\_\_\_\_

## II. Read the passage given below. 10

- The chart given below provides information about the amount of carbon emissions in different countries during three different years (1975, 1990, and 2005).



- The bar chart compares the emission of carbon dioxide into the atmosphere of six countries, including two of them coming from emerging nations, for three decades starting from 1975 until 2005.
- As an overall assessment, it can clearly be seen that only Germany and United Kingdom managed to reduce the carbon emissions compared to the other countries.
- USA, being the number one polluter of all, emitted 1,200,000 thousand metric tonnes in 1975 and this count increased to 1,300,000 and 1,600,000 thousand metric tonnes in 1990 and 2005 respectively. In contrast, the carbon emissions of China was nearly 300,000 thousand metric tonnes in 1975 and it rose by nearly 100% in 1990 and surged dramatically to just below 1,600,000 thousand metric tonnes in 2005. In terms of the percentage increase, China was the largest contributor in carbon emissions of all.
- The figures for Germany and the United Kingdom remained relatively stable throughout the period of time, and so were for Canada until 1990. The carbon dioxide emissions in India increased exponentially from around 100,000 in 1975 to just below 400,000 thousand metric tonnes in 2005.



Based on your understanding of the passage, answer the questions given below.

- i. The data given in the graph compares the amount of emission of \_\_\_\_\_.
- nitrogen
  - carbon dioxide
  - oxygen
  - none of these
- ii. Which country was the largest contributor in carbon emissions of all in year 2005 in terms of percentage increase?
- iii. According to the passage, which country is the most polluter country?
- India
  - China
  - USA
  - Germany
- iv. Infer one reason for the following, based on information in the passage:  
Surging of CO<sub>2</sub> emission in million tonnes.
- v. Which country has the lowest emission of CO<sub>2</sub> in the graph?
- Germany
  - United Kingdom
  - Canada
  - India
- vi. Which country has observed a dramatic rise over the years in CO<sub>2</sub> emission?
- India
  - China
  - USA
  - Germany
- vii. Substitute the word 'nearly' with ONE WORD similar in meaning, in the following sentence from paragraph 4:  
The carbon emissions of China was nearly 300,000 thousand metric tonnes in 1975 and it rose...
- viii. Name two countries which had the same level of CO<sub>2</sub> emission in the first and the second decade?
- \_\_\_\_\_
  - \_\_\_\_\_

- ix. State whether the following statement is TRUE or FALSE:  
The countries have achieved meteoric rise in CO<sub>2</sub> emission.
- x. Which of the following countries reported gradual growth in reduction of global CO<sub>2</sub> emission?
- Germany and India
  - USA and China
  - The United Kingdom and USA
  - Germany and The United Kingdom

### III. SECTION B- GRAMMAR 10

Attempt ANY TEN of the following questions. 10

- i. Fill in the blank by choosing the correct option to complete the sentence.  
If we \_\_\_\_\_ one more batsman in our team, we would have won the match.
- had had
  - would have been
  - would have
  - would have had
- ii. Read the conversation between Reena and Rakesh. Complete the sentence by reporting Rakesh's reply correctly.  
Reena : Have you seen 'Three Idiots'?  
Rakesh : I saw them yesterday in my class.  
  
Reena asked Rakesh if he had seen 'Three Idiots'. Rakesh replied that \_\_\_\_\_.
- iii. Select the correct option to fill in the blank for the given line.  
The swimmer was tired but he \_\_\_\_\_ reach the shore before he collapsed.
- will
  - could
  - may
  - must
- iv. Select the option identifies the error and supplies the correction for the following line:  
Have you ever learn from a mistake you have made?

Option No.	Error	Correction
(a)	learn	learnt
(b)	Have	Has



(c)	a	the
(d)	made	make

- v. Complete the given sentence, by filling in the blank with the correct option :

I bought a new car last year, but I \_\_\_\_\_ my old car yet, so at present I have two cars.

- (a) sell  
(b) have not sold  
(c) sold  
(d) did not sell

- vi. Fill in the blank by using the correct form of the word in the bracket.

Neither you nor your sister should \_\_\_\_\_ (talk) to them.

- vii. Report the dialogue between Sanjay and Madan, by completing the sentence :

Sanjay: I am surprised to see you here in Delhi. When did you come?

Madan: I came here yesterday. I have been offered a job here.

Sanjay told Madan that he was surprised to see him there in Delhi and asked when he had come. Madan replied that he had come there the previous day and added that \_\_\_\_\_.

- viii. Identify the error in the given sentence and supply the correction.

A good business letter is one that get results.

Use the given format for your response.

Error	Correction

- ix. Transform the following direct speech into reported speech:

He said, "Reena, do you want to buy a house in Noida?"

- x. Fill in the blank by choosing the correct option, to complete the sentence.

He said I \_\_\_\_\_ use his car whenever I wanted.

- (a) will  
(b) would  
(c) could  
(d) can

- xi. Ram and Shyam are discussing their plans for the weekend. Fill in the blank to complete the dialogue below by choosing the correct options.

Ram: What are you doing this weekend, shyam?

Shyam: I don't have any special plan.

Ram: How do you like the idea \_\_\_\_\_.

- (a) of go for a picnic to the Dal Lake?  
(b) of going for a picnic to the Dal Lake?  
(c) of went for a picnic to the Dal Lake?  
(d) of going for a picnic by the Dal Lake?

- xii. Identify the error and supply the correction, for the following sentence:

Every trees have a single woody stem called a trunk which supports a mass of branches carrying leaves.

Use the given format for your response.

Error	Correction

#### IV. SECTION B- CREATIVE WRITING SKILLS 10

*All the names and addresses used in the questions are fictitious. Resemblance, if any, is purely coincidental.*

1. Attempt **ANY ONE** from A and B given below. 5

- A. You are Praveen of 23, Civil Lines, Jaipur. Write a letter to the Editor of Dainik Bhaskar, Jaipur about frequent break-down of electricity.

Or

- B. You have seen an advertisement of a new model sports bike launched by Honda. You are a passionate racer and are keen to buy the new model of racing bikes being offered. Next month a zonal level Bike Marathon is taking place and you are keen to enroll your name as a contestant. Write a letter to M/s Honda Bikes and Scooters, Kashmere Gate, New Delhi enquiring about the price, specifications and availability of accessories that long distance racers would require. You are Man Singh living in Green Park, New Delhi.

2. Attempt **ANY ONE** from A and B given below. 5

- A. You are Suresh/Lalita. Given below is a table based on data given about the number of tourists who visited your city in the past two years. Write an analytical paragraph on 'Promotion of Tourism' taking information from the table given below together with your own ideas in 100-120 words.

Year	Tourists Who Visited	
	Domestic	International
2020	444569	8563
2021	436350	11478

**Plans of Tourism Department:**

- To develop a wildlife park.
- Illumination and light and sound programme at one of the places of tourist interest in the city.
- To develop a big amusement park.
- Convention centre and a multiplex in the city.

Or

- B.** You are the Head Boy/Head Girl of your school. You decided to make the school population aware of the advantages of tree plantation and tell them how trees can serve as better air-conditioners. Write an analytical paragraph in 100-120 words. Take help of the cues given below.

**Cues :**

Trees keep environment cool by

- taking heat of earth and air
- absorbing carbon-dioxide that helps in controlling temperature rise
- bringing rains
- checking direct sunlight
- providing shade

**SECTION C- LITERATURE 40**

**V. Reference to the Context 10**

**1. Attempt ANY ONE of two extracts given. 5**

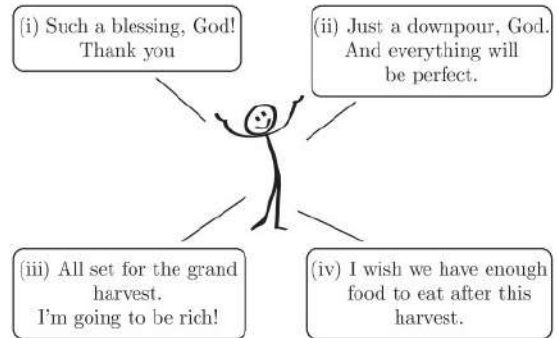
**1.A** The house- the only one in the entire valley- sat on the crest of a low hill. From this height one could see the river and the field of ripe corn dotted with the flowers that always promised a good harvest. The only thing the earth needed was a good downpour or at least a shower. Throughout the morning Lencho - who knew his fields intimately- had done nothing but see the sky towards the north-east.

*(A Letter to God)*

- Where was Lencho's house located?
- The field of corn dotted with flowers means that
  - not a single flower was bigger than a dot
  - the flowers were scattered across.
  - the flowers were in shaped like dots.
  - the flowers had shrunk in size.

- Find the word from the passage which means 'very closely'.

- Based on the given extract, what is Lencho not likely to think while looking at his field?



- Option (i)
- Option (ii)
- Option (iii)
- Option (iv)

- Which quote supports the idea in the given extract?
  - "Farming is a profession of hope."
  - "I would rather be on my farm than be emperor of the world."
  - "Farming looks mighty easy when your plough is a pencil, and you're a thousand miles from the corn field."
  - "Those too lazy to plough in the right season will have no food at the harvest."

Or

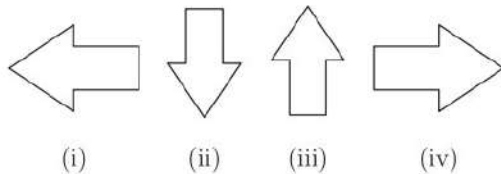
**1.B** The two boys started in surprise at the fresh muddy imprints of a pair of bare feet. What was a barefooted man doing on the steps of a house in the middle of London? And where was the man? As they gazed, a remarkable sight met their eyes. A fresh footmark appeared from nowhere! Further footprints followed, one after another, descending the steps and progressing down the street. The boys followed, fascinated, until the muddy impressions became fainter and fainter, and at last disappeared altogether.

*(Footprints Without Feet)*

- Infer one reason for the following, based on information in the extract.  
The boys were surprised to see a barefooted man in London.
- Complete the analogy by selecting the suitable word from the text.

partition : divide :: conjugate : \_\_\_\_\_  
 (Clue : To partition means to divide, similarly to conjugate means to...)

- iii. Pick the option that best describes how the boys are feeling based on the extract.
- enchanted, curious, puzzled
  - captivated, curious, puzzled
  - repulsed, curious, captivated
  - enchanted, repulsed, curious
- iv. The boys felt that the footprints were
- seen due to some magic trick.
  - a figment of imagination.
  - of a man who was invisible.
  - those of a mysterious man.
- v. Pick the option that lists the correct direction of the footprints on the stairs, as noticed by the boys.



- option (i)
  - option (ii)
  - option (iii)
  - option (iv)
2. Attempt **ANY ONE** of two extracts given.      5

2.A Has given my heart  
 A change of mood  
 And saved some part  
 Of a day I had rued.

(Dust of Snow)

- i. How does the poet feel now?
- Ecstatic
  - Pessimistic
  - Reckless
  - Despondent
- ii. What does the poem Dust of Snow teach us?
- iii. Which poetic device has been used in 'And saved some part'?
- Assonance
  - Personification
  - Alliteration
  - Enjambment

- iv. What does the word 'Rued' mean?
- Feel happy
  - Feel remorse for
  - Feel ravishing
  - Feels on the top of the world
- v. Fill in the blank with suitable poetic device.  
 \_\_\_\_\_ has been used in 'Has given my heart'.

Or

2.B But I can get a hair-dye  
 And set such colour there,  
 Brown, or black, or carrot,  
 That young men in despair  
 May love me for myself alone  
 And not my yellow hair.

(For Anne Gregory)

- i. Given below are the taglines of four hypothetical brands. Choose the correct option that fits the best with the first three lines of the given stanza.
- LITELIFE  
 Food that makes you light.
  - GET SET  
 My home. My gym.
  - LOOKBOOK  
 No game over, get makeover.
  - PLANET FOOD  
 Eat! Eat! Eat! Repeat!
- Option 1
  - Option 2
  - Option 3
  - Option 4
- ii. The form of the given stanza is a part of
- an agreement.
  - a disapproval.
  - an engagement.
  - an argument.
- iii. Infer one reason for the following, based on information in the passage:  
 Anne says that she can change her hair colour.
- iv. State whether the following statement is TRUE or FALSE:  
 The speaker wants to change her hair colour so that it may appeal to young men.
- v. Choose the product that best shows what Anne would invest in, to ensure that young men love her for herself

and not her hair.



- (a) Option 1
- (b) Option 2
- (c) Option 3
- (d) Option 4

**VI Answer ANY FOUR of the following in about 40-50 words each.  $4 \times 3 = 12$**

- i. Nelson Mandela speaks of twin obligations. What are they?  
*(Nelson Mandela - Long Walk to Freedom)*
- ii. What does Anne write in the diary about herself and her sister ?  
*(From the Diary of Anne Frank)*
- iii. How did the Buddha teach Kisa Gotami the truth of life?  
*(The Sermon at Benares)*
- iv. How did Belinda, Ink, Blink and Mustard react on seeing the pirate ?  
*(The Tale of Custard the Dragon)*
- v. The tigers in the poem 'A Tiger in the Zoo' has some obvious limitations, describe them in contrast to its natural habitat.

**VII Answer ANY TWO of the following in about 40-50 words each.  $2 \times 3 = 6$**

- i. Why did Hari Singh think that Anil's job was queer?  
*(The Thief's Story)*
- ii. Why did Horace Danby feel sure of his success in that year's robbery?  
*(A Question of Trust)*
- iii. Which character traits of Bholi have had an everlasting impression on you? Why?  
*(Bholi)*

**VIII Answer ANY ONE of the following in about 100-120 words. **6****

- i. One is known by one's roots. The people of Coorg are also recognized for their values and traits in spite of being thousands of miles away from their places of origin-Greece and Arabia. Describe their values and traits.  
*(Glimpses of India)*

Or

- ii. If the Buddha were to summarise the life lessons of 'the Ball poem' what would that sermon be? Think and create this address for people of your age.

**IX Answer ANY ONE of the following in about 100-120 words. **6****

- i. Not to accept the limitations of our life makes us unhappy in our lives. Describe how Matilda Loisel suffers in her life because she does not accept that she is not a rich person.

*(The Necklace)*

Or

- ii. Give a brief character sketch of Fowler ? What are the values reflected in his character?

*(The Midnight Visitor)*

□□□□□□



**Sample Paper 1**  
**Class X Exam 2022-23**  
**English-Language and Literature (184)**

**Time Allowed : 3 Hrs.**

**Maximum Marks: 80**

**General Instructions:**

1. 15-minute prior reading time allotted for Q-paper reading.
2. The Question Paper contains THREE sections READING, GRAMMAR & WRITING and LITERATURE.
3. Attempt question based on specific instructions for each part.

**SECTION A- READING SKILLS                      20**

**I. Read the passage given below.                      10**

1. Hobbies help us grow as a person. The best way to have a new hobby is to try something new. All of us are unique, and this is the reason why our hobbies and interests are different. Once we find an activity we are passionate about, we can explore that activity more. When you get hooked, you will realize that your hobby has become an integral part of your life. Having a hobby that we enjoy brings us joy and refreshes us. Hobbies help us to manage our leisure and unplanned time more productively. It also affords you the opportunity to learn new skills in your work. But these are not the only benefits of having a hobby.
2. It feels great to be skilled and good at something, doesn't it? And this is what that makes you confident. It can take some time to develop your hobby so that you may be able to tell that you are skilled. But, the journey of experiencing your hobby is very rewarding in itself. With the exposure to different types of activities these days, it doesn't matter which activity you choose. Whether you are pursuing a craft, sports, puzzles, or skill development, your hobby should be a diversion and a passion. Simultaneously, if your hobby gives you a sense of purpose, then you will be more confident about challenging yourself in your hobby and help you prepare for learning new things at work.
3. Hobbies give you an opportunity to enhance your life. Hobbies allow you to de-stress yourself while remaining mentally productive. Having hobbies promotes better health and may lower the risk of having high blood pressure. Enjoying a few hours of your hobby a week can also reduce the risk of depression and dementia. Hobbies refocus your mind on to something that you enjoy doing. Hobbies that include physical activities create chemical changes in your body that help to reduce stress.
4. Even if it doesn't involve physical activities, you can still reap the benefits of having a hobby. Getting a

short break from work and doing something you are passionate about can rejuvenate your mind and help prepare you to handle challenges in the future in a better way.

5. Hobbies may provide an opportunity for you to socialize with people and that can be an additional benefit for your overall well-being. You can connect with people who enjoy doing the same things that you do. You can meet new people, discuss your hobby and get connected to a bigger circle that may even help you turn your hobby into your profession. The internet provides numerous groups and forums to connect with people that enjoy doing the same things that you want to do.
6. Some hobbies require creativity and if you develop creativity through your hobby, it can be beneficial. Creativity can help you experience new things at school and work. The skill of being creative is essential in today's world.

**Based on your understanding of the passage, answer the questions given below.**

- i. When a person gets hooked on a hobby, he realises that :
  - (a) it has become an integral part of our life.
  - (b) it has much more benefits than we realised.
  - (c) it is much more enjoyable to have a hobby.
  - (d) it is quite essential for us to learn some skills through our hobbies.
- ii. No matter which sort of hobby you are pursuing, be it a craft, sports, puzzles, or skill development, your hobby should be :
  - (a) useful for you in the long run.
  - (b) a skill that improves your present circumstances.
  - (c) a diversion and a passion.
  - (d) followed through till the end.

- iii. The journey of experiencing a hobby is quite :
  - (a) challenging for a person.
  - (b) rewarding in itself.
  - (c) demanding in itself.
  - (d) inspirational for a person.
- iv. State any one way through which hobbies enhance your life?
- v. Getting a hobby means having a short break from work and doing something you are passionate about which can
  - (a) give you a peace of mind from all the other problems of daily hectic life and make you feel refreshed.
  - (b) help you enhance and improve your skills and push you forward on your path to success.
  - (c) make you enjoy and appreciate your life much more as you are happy pursuing what you love.
  - (d) rejuvenate your mind and help prepare you to handle challenges in the future in a better way.
- vi. List any two benefits of having a hobby.
  - 1. \_\_\_\_\_
  - 2. \_\_\_\_\_

- vii. What is essential in today's world?
- viii. Give an appropriate title for the passage.
- ix. Supply 1 point to justify the following:  
Hobby provides you with an opportunity to socialise with people.
- x. Choose an option that is clearly a synonym of the word 'hooked'.
  - (a) opposed
  - (b) indifferent
  - (c) willing
  - (d) captivated

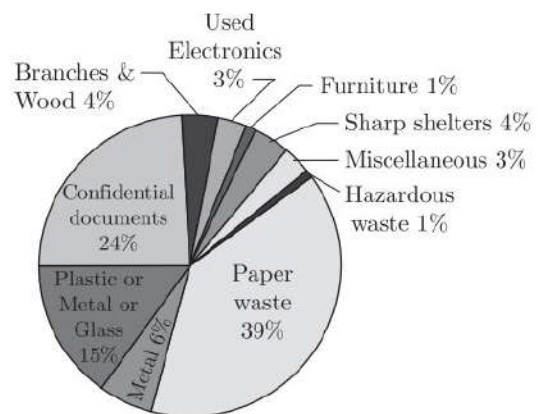
**II. Read the passage given below. 10**

1. Conference series LLC Ltd organises a conference series of 1000+ global events inclusive of 300+ conferences, 900+ upcoming and previous symposiums and workshops in USA, Europe and Asia with support from 1000 more Scientific societies and publishes 700+ open access journals which contain over 30000 eminent personalities, reputed scientists as Editorial board members.
2. Recycling and Waste Management Convention 2018 proudly invites contributors across the globe

to 9th World Convention on Recycling and Waste Management during October 22-23,2018 in Osaka, Japan, which includes prompt keynote presentations, oral talks, poster presentations and exhibitions. We are delighted to say that it is the 9th World Convention on Recycling and Waste Management which will be held in a beautiful city of Osaka, Japan and hence we invite you all to attend and register.

3. 9th World Convention on Recycling and Waste Management is mainly based on the theme "Advocating Waste Disposal and Recycling Practices for Clean and Green Environment." We warmly welcome all the participants - leading scientists, researchers and scholars of the world to attend the convention. We provide a platform for young researchers and students to present their research through oral presentations through which they can develop a foundation for collaboration among young researchers.
4. The organising committee aims at setting a platform for all the budding scientists and researchers to present their real-time work and share their views and aspects related to the theme of the conference. The organising committee is gearing up for an exciting and informative conference programme including plenary lecture, symposia, workshops on a variety of topics, poster presentations and various programmes for participants from all over the world.

**Total Recycling 2018**



**Based on your understanding of the passage, answer the questions given below.**

- i. Infer one reason for the following, based on information in the passage.  
Waste management and recycling it.
- ii. Select the appropriate option to fill in the blanks.  
\_\_\_\_\_ has been considered as the second nature to us.

- (a) Sorting of waste
- (b) Recycling of waste
- (c) Waste management
- (d) Implementing steps framed and deployed in convention

iii. Complete the following analogy correctly with a word/phrase from paragraph 2:

Delhi : India :: Tokyo : \_\_\_\_\_  
 (Clue : Delhi is capital of India, similarly Tokyo is capital of...)

- iv. What theme is being highlighted in the given passage?
- (a) Efficient means of reducing garbage
  - (b) Various techniques to be employed to recycle the goods
  - (c) Efficient ways of waste disposal
  - (d) Both (b) and (c)

- v. Which of the following notion in the conference has been emphasised to be deployed?
- (a) Waste disposal management
  - (b) Waste management
  - (c) Recycling of goods
  - (d) Reshaping Earth's future

- vi. Fill in the blank by selecting the correct option.  
 According to the pie-chart, Branches & wood has been recycled at the rate of \_\_\_\_\_.
- (a) 1%
  - (b) 24%
  - (c) 4%
  - (d) 3%

vii. Substitute the word 'present' with ONE WORD similar in meaning, in the following sentence from paragraph 3:  
 We provide a platform for young researchers and students to **present** their research...

viii. List any two points that the given data represents.

- ix. Which activity contributes collectively towards paper waste recycled percentage?
- x. What has been considered as an efficient means to reduce landfill area?
- (a) Sorting of waste
  - (b) Recycling or composting waste
  - (c) Both (a) and (b)
  - (d) None of these

**III. SECTION B- GRAMMAR 10**

Attempt **ANY TEN** of the following questions. **10**

i. Fill in the blank by choosing the correct option to complete the sentence.  
 The boys \_\_\_\_\_ to my lecture since 8 O'clock this morning.

- (a) were listening
- (b) have been listening
- (c) had been listening
- (d) None of these

ii. Read the conversation between a mother and her daughter. Complete the sentence by reporting daughter's reply correctly.  
 Mother: Why are you looking so worried?  
 Daughter: My exams are approaching.  
 Mother asked her daughter why she was looking very worried. The daughter replied that \_\_\_\_\_.

iii. Select the correct option to fill in the blank for the given line.  
 I \_\_\_\_\_ rather die than join the gang of terrorists.

- (a) could
- (b) should
- (c) would
- (d) can

iv. Select the option that identifies the error and supplies the correction for the following line:  
 A little political thinkers think that liberty and equality can't go together.

Option No.	Error	Correction
(a)	can't	couldn't
(b)	think	thinks
(c)	A little	Some
(d)	go	goes

v. Complete the given sentence, by filling in the blank with the correct option:  
 They met you at night after you \_\_\_\_\_ your work.

- (a) had finished
- (b) have finished
- (c) finished
- (d) will finish



vi. Fill in the blank by using the correct form of the word in the bracket.  
Chris, in addition to his brother Zack, \_\_\_\_\_ (play) hockey on Saturday.

vii. Report the dialogue between a doctor and a patient, by completing the sentence:  
Doctor : You should take this medicine every day.  
Patient : Should I take it before dinner or after dinner?  
Doctor : No, you should take it after breakfast.

The Doctor advised the patient that he should take that medicine every day. The patient further asked if he should take it before dinner or after dinner. The doctor replied negatively and then said that \_\_\_\_\_.

viii. Identify the error in the given sentence and supply the correction.  
Some guys like to fights on even playing grounds, and some guys like to cheat.

Use the given format for your response.

Error	Correction

ix. Transform the following direct speech into reported speech:  
He asked, "Will you be coming?"

x. Fill in the blank by choosing the correct option, to complete the sentence.  
My class teacher told me that I \_\_\_\_\_ work hard.  
(a) shall  
(b) could  
(c) can  
(d) should

xi. Select the correct option to complete the narration of the dialogue between Radha and Shikha.  
Radha : Do you know how to swim?  
Shikha : Yes I know. I have learnt it during this summer vacation.

Radha asked Shikha if/whether she knew how to swim. Then Shikha replied in affirmative and also added that \_\_\_\_\_.

- (a) she had learnt it during the summer vacation
- (b) she has learnt it during the summer vacation
- (c) she have learnt it during the summer vacation
- (d) she had learn it during the summer vacation

xiii. Identify the error and supply the correction, for the following sentence:  
Every people went to welcome the Indian Cricket team.

Error	Correction

**IV. SECTION B- CREATIVE WRITING SKILLS 10**

All the names and addresses used in the questions are fictitious. Resemblance, if any, is purely coincidental.

1. Attempt **ANY ONE** from A and B given below. 5

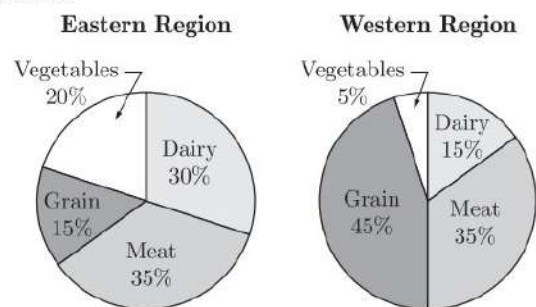
A. Write a letter to the Editor of "The Times of India", Delhi expressing your concern over the increase in the rate of road accident, rash driving and overcrowded road transport. You are Priya/Priyanshu living at B-47 Avaz Vikas, Mayur Vihar, New Delhi.

Or

B. Write an application to your principal asking permission to remain absent from school for 5 days on account of your brother's marriage.

2. Attempt **ANY ONE** from A and B given below. 5

A. The charts below show agricultural production in two different regions of the country. Write an analytical paragraph in 100-120 words by selecting and reporting the main features, and making comparisons where relevant.



Or

B. Given below is a newspaper report on the state of cancer prevailing in India. You have been asked to write an analytical paragraph on 'Cancer - a silent killer' Taking information from the clipping given below together with your own ideas, write this paragraph in 100-120 words.  
"In India, cities are more cancer-prone than rural areas. In the early 1990's, we expected one out of 10-



15 urban Indians to get cancer in their life-time, that is every second or third family would have to face this disease. This is partly due to high levels of benzene in the air and also that the metros are exposed to high levels of pesticides in their foods. In order to check the steady growth of cancer in the country, the Government shall have to give priority to preventive action. At the same time measures to undertake improvement in facilities for the treatment of cancer shall have to be adopted.”

### SECTION C- LITERATURE 40

#### V. Reference to the Context 10

##### 1. Attempt **ANY ONE** of two extracts given. 5

1.A “It was only when I began to learn that my boyhood freedom was an illusion, when I discovered as a young man that my freedom had already been taken from me, that I began to hunger for it. At first as a student I wanted freedom only for myself, the transitory freedoms of being able to stay out at night, read what I pleased and go where I chose. Later, as a young man in Johannesburg, I yearned for the basic and honourable freedoms...”

(Nelson Mandela : Long Walk to Freedom)

- i. The title that best suits this extract is
  - (a) Freedom for everything
  - (b) Knowledge about Freedom
  - (c) Significance of Freedom
  - (d) Realisation of Freedom
- ii. Why do you think the speaker mentions some freedoms as ‘transitory’?
- iii. Choose the option that best fits the usage of the word ‘illusion’ as used in the extract.
  - (a) He was never able to get past the illusion.
  - (b) The illusion I experienced was quite intriguing.
  - (c) A large mirror in the room creates an illusion.
  - (d) I was living under the illusion that this is possible.
- iv. The speaker says, ‘at first as a student I wanted freedom only for myself.’ Why do you think he only thought about himself?
  - (a) He didn’t want to think about the freedom denied to others.
  - (b) He was being selfish and was only bothered about himself.

- (c) He didn’t think that freedom denied to him was important for others.
- (d) He was too young to realise that freedom was denied to others as well.

##### v. Fill in the blank with ONE WORD only.

The speaker’s belief about freedom, since \_\_\_\_\_ proved false. It was not until the speaker grew up to be a young man when it dawned on him that he was deprived of freedom.

Or

1.B THINK-TANK: Mirror, mirror, in my hand. Who is the most fantastically intellectually gifted being in the land?

OFFSTAGE VOICE: (after a pause) You, sir.

THINK -TANK: (smacking mirror) Quicker. Answer quicker next time. I hate a slow mirror. (He admires himself in the mirror.) Ah, there I am. Are we Martians not a handsome race? So much more attractive than those ugly Earthlings with their tiny heads. Noodle, you keep on exercising your mind, and someday you’ll have a balloon brain just like mine.

NOODLE: Oh, I hope so, Mighty Think-Tank. I hope so.

THINK -TANK: Now, contact the space probe. I want to invade that primitive ball of mud called Earth before lunch.

NOODLE: It shall be done, sir. (He adjusts levers on switchboard. Electronic buzzes and beeps are heard as the curtains open.)

(The Book that Saved the Earth)

- i. Choose the option that lists the most appropriate meaning of think-tank from those given below.
  - (a) A tank that helps you think deeper than an average person, if you use its contents regularly.
  - (b) Non-stop flow of ideas from a fixed source about one particular issue.
  - (c) A pool of ideas and solutions to various problems via an individual, group or organisation.
  - (d) A method by way of which people think collectively to identify stray thoughts among them.
- ii. The playwright places certain words and sentences in brackets in the given extract. List any two ways these benefit both the director and actors.
  1. \_\_\_\_\_
  2. \_\_\_\_\_

- iii. Choose the option that correctly categorizes the phrase "(after a pause)" based on the dialogue given above.
- aside
  - stage direction
  - narration
  - setting
- iv. Choose the option that gives you fits the example of an irony from the ones given below.
- "Who is the most fantastically intellectually gifted being in the land?"
  - "I hate a slow mirror."
  - "Noodle, you keep on exercising your mind, and someday you'll have a balloon brain just like mine."
  - "I want to invade that primitive ball of mud called Earth before lunch."
- v. Complete the analogy by selecting the suitable word from the text.
- spinning : top :: rotation : \_\_\_\_\_  
 (Clue : Spinning is the movement of a top, similarly rotation is the movement of the...)

**2. Attempt ANY ONE of two extracts given.**

5

- 2.A** If strolling forth, a beast you view,  
 Whose hide with spots is peppered,  
 As soon as he has lept on you,  
 You'll know it is the Leopard.  
 Twi'll do no good to roar with pain,  
 He'll only lep and lep again.  
 (How to Tell Wild Animals)

- i. Choose the option listing the stanza that would follow the given extract.
- The leopard stalks on silent paws.  
 With deadly armor of fangs and claws.  
 He lies in his tree perch through out the day.  
 Sleeping and resting the hours away.
  - A spotted leopard in a banyan tree,  
 kept his yellow carnivore-ic eyes on me.  
 I knew better than to move fast or try to flee.  
 His eyes narrowed, but I refused to see.  
 How fast that cat was chasing after me.  
 If I can just get to that tall tall.....

- His claws and paws will make you forget,  
 If you're in a dream or reality,  
 And you'll feel clawed and pawed. I bet,  
 The peppered pounce a certainty.  
 This a beast that runs and strikes fast,  
 If you're caught you sure won't last.
- The leopard and the lion chose to become friends,  
 For they were all proud of claws on their paws,  
 They each glorified one another for their mighty,  
 Ability to live on meat of other fauna throughout a year,  
 They each admired one another for running speed,  
 They each remained firm and loyal to one rule;  
 Lions don't eat leopards neither leopards eat lions.

- Option 1
- Option 2
- Option 3
- Option 4

- ii. Given below are four examples of activities that Jasmeet does. Choose the option that correctly demonstrates 'strolling'.
- Jasmeet runs with a great speed after being chased by a dog.
  - Jasmeet walks in the garden, relaxing while listening to his favourite song.
  - Jasmeet skids sharply on the icy skate rink.
  - Jasmeet rushes to switch off the water pump in the backyard.
- iii. State whether the following statement is TRUE or FALSE:  
 The poet asks the reader to hide on seeing the leopard.
- iv. The repetition used in "he'll only lep and lep again" is an example of \_\_\_\_\_.

- v. Choose the option that matches with the rhyme scheme of the extract.
- Proud loud child wild jungle mingle
  - Wild jungle child mingle loud proud
  - Wild proud child loud jungle mingle
  - Loud jungle wild child mingle proud
- option 1
  - option 2
  - option 3
  - option 4

Or

- 2.B** The fog comes  
 on little cat feet.  
 It sits looking

over harbour and city  
on silent haunches  
and then moves on.

(Fog)

- (a) Option 1
- (b) Option 2
- (c) Option 3
- (d) Option 4

i. List any two qualities of the cat that Carl Sandburg applies to the fog?

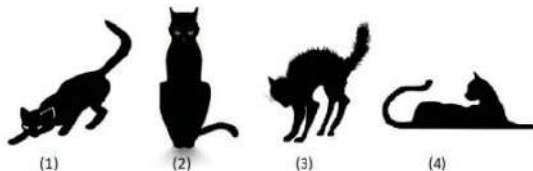
1. \_\_\_\_\_
2. \_\_\_\_\_

ii. Which one/s of the following applies to the given lines?

1. Personification is a literary device where you give an animal, object or natural phenomenon, qualities or abilities that only a human can have.
2. Transferred epithet is a literary device when an adjective usually used to describe one thing is transferred to another.
3. Imagery is the language used by poets and writers to create visual representation of ideas in the minds of the readers.
4. Oxymoron is a figure of speech in which contradictory terms appear side by side.

- (a) 1 and 4
- (b) 2 and 3
- (c) Only 1
- (d) Only 3

iii. Pick the option that includes an image of the cat on its haunches.



- (a) Option 1
- (b) Option 2
- (c) Option 3
- (d) Option 4

iv. Choose the option that does not list movement of the fog.

1. It stole in on us like a foot-pad somewhere out of the sea and air... E.J.Pratt
2. A fog drifts in, the haevy-laden Cold white ghost of the sea- Sara Teasdale
3. The fog it tricks the eye The wonder of the vell of shite under the clear blue sky. K.C.Cox
4. ...comes gliding, rolling in at ground level, pressing its white featureless face against... -R.H.Grenville

v. Complete the analogy by selecting the suitable word from the text.

manacle : hands :: fetter : \_\_\_\_\_

(Clue : A manacle is a shackle for the hands, and a fetter is a shackle for the...)

**VI Answer ANY FOUR of the following in about 40-50 words each. 4 × 3 = 12**

- i. Why does the postmaster send money to Lencho? Why does he sign the letter 'God'?  
(A Letter to God)
- ii. What special characteristic of Mijbil did Maxwell learn after he took him to the bathroom?  
(Mijbil the Otter)
- iii. Why did the Buddha ask Kisa Gotami to bring a handful of mustard seeds?  
(The Sermon at Benares)
- iv. Describe the method Anne Gregory suggested in order to prove that she is loved for who she is.  
(For Anne Gregory)
- v. "Fire and Ice" project a pessimistic outlook. Comment.

**VII Answer ANY TWO of the following in about 40-50 words each. 2 × 3 = 6**

- i. Why was Tricky an uninteresting object for other dogs at the surgery?  
(A Triumph of Surgery)
- ii. Henry unintentionally saved Ausable's life. Briefly comment.  
(The Midnight Visitor)
- iii. How did the Loiseles react when they realized that the necklace had been lost?

**VIII Answer ANY ONE of the following in about 100-120 words. 6**

- i. Valli was sensitive, but at the same time, she was fearless and quite determined. Think of another character from your textbook, First Flight, who displayed similar character traits. Compare and contrast the lives of Valli and the other character.

Or

- ii. Explain the phrase "the forest that was empty all these days". After reading the poem "The Trees", for whom do you think are the forests needed? Imagine

you are a tree in a forest, what values would you like the humans to learn from the tree ?

**IX Answer ANY ONE of the following in about 100-120 words. 6**

- i. “And in her smiling eyes was the right of deep satisfaction that an artist feels when he is contemplating the completion of his masterpiece.” Imagine you are Bholi’s teacher. You are overwhelmed with a sense of satisfaction to see the conversion of ‘Bholi’ to ‘Sulekha’. Express your feelings in the form of a diary entry.

**Or**

- ii. Give a character-sketch of Hari Singh.  
*(The Thief’s Story)*

□□□□□□



**Sample Paper 2**  
**Social Science (Code 087)**  
**Class X Session 2022-23**

**Time: 3 Hours**

**Max. Marks: 80**

**General Instructions:**

- i. Question paper comprises five Sections – A, B, C, D and E. There are 37 questions in the question paper. All questions are compulsory.
- ii. Section A – From question 1 to 20 are MCQs of 1 mark each.
- iii. Section B – Question no. 21 to 24 are Very Short Answer Type Questions, carrying 2 marks each. Answer to each question should not exceed 40 words.
- iv. Section C contains Q.25 to Q.29 are Short Answer Type Questions, carrying 3 marks each. Answer to each question should not exceed 60 words.
- v. Section D – Question no. 30 to 33 are long answer type questions, carrying 5 marks each. Answer to each question should not exceed 120 words.
- vi. Section-E - Questions no from 34 to 36 are case based questions with three sub questions and are of 4 marks each.
- vii. Section F – Question no. 37 is map based, carrying 5 marks with two parts, 37a from History (2 marks) and 37b from Geography (3 marks).
- viii. There is no overall choice in the question paper. However, an internal choice has been provided in few questions. Only one of the choices in such questions have to be attempted.
- ix. In addition to this, separate instructions are given with each section and question, wherever necessary.

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**SECTION-A**

**Multiple Choice Questions (Q 1 to 20)**

**2X4=8**

1. Study the picture and answer the following question-



Continue on next page....

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Who designed the cover of German almanac?

- (a) Otto von Bismarck
- (b) Andreas Rebmann
- (c) Giuseppe Mazzini
- (d) Napoleon

2. When was the first clear expression of nationalism noticed in Europe?

- (a) 1787
- (b) 1759
- (c) 1789
- (d) 1769

3. Match the following items given in column I with those in column II.

	Column I		Column II
A.	Silk routes	1.	Institution set-up to finance postwar reconstruction.
B.	G-77	2.	Carnival in Trinidad
C.	Canal colonies	3.	Pre-modern trade links
D.	World Bank	4.	Countries demanding a new international economic order
E.	Hosay	5.	Semi-desert wastes in the Punjab transformed by irrigation

Select the correct option :

- (a) A → 1, B → 5, C → 3, D → 4, E → 2
- (b) A → 4, B → 1, C → 2, D → 3, E → 5
- (c) A → 2, B → 5, C → 4, D → 1, E → 3
- (d) A → 3, B → 4, C → 5, D → 1, E → 2

4. Arrange the following cities according to the size (small large) of large- scale industries in these regions-

1. United provinces
2. Bombay
3. Madras
4. Bengal

Option :

- (a) 1, 3, 2, 4
- (b) 3, 4, 2, 1
- (c) 3, 4, 1, 2
- (d) 2, 3, 1, 4

5. The total geographical area of India is \_\_\_\_.

- (a) 328 million square kilometer
- (b) 3.28 million square kilometer
- (c) 32.8 million square kilometer
- (d) 0.328 million square kilometer

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6. Processing of jute and rubber falls under which of the following industries?

- (a) Agro based
- (b) Mineral based
- (c) Business based
- (d) None of these

7. Complete the table with correct information :

Zone	State	Port	Features
Western Coast	Gujarat	A - ?	Known as tidal port. Acknowledged as trade free zone.
Eastern Coast	B - ?	Tuticorin	It has a natural harbour and rich hinterland.

Choose correct option :

- (a) A - Kandla, B - Tamil Nadu
- (b) A - Kandla, B - Maharashtra
- (c) A - Mormugao, B - Maharashtra
- (d) A - Mormugao, B - Tamil Nadu

8. What does the cartoon represent?



- (a) Concentration of powers which are controlling the democratic regimes of their respective country.
- (b) The main leaders of two countries are going somewhere.
- (c) More powers were given to the democracy.
- (d) Putin is advising Bush to control the horse tightly.

9. Identify the Country-

- Emerged as an independent country in 1948.
- Neighbouring country of India.
- 74% of population speaks Sinhala while 18% of population are Tamil speakers.
- In 1956, an Act was passed to recognize Sinhala as the only official language of this country.

Select the appropriate option from the following.

- (a) Germany

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- (b) Belgium
- (c) Srilanka
- (d) India

10. Which of the following are perfectly matched :

	List 1	List II
(a)	Communalist	A person who says that religion is the principal basis of community.
(b)	Feminist	A person who does not discriminate others on the basis of religious beliefs.
(c)	Secularist	A person who thinks that caste is the principal basis of community.
(d)	Casteist	A person who believes in equal rights and opportunities for women and men.

11. Consider the following statements about the ethnic composition of Sri Lanka:

- A. Major social groups are the Sinhala- speaking (74%) and Tamil-speaking (18%)?
- B. Among the Tamils, there are two sub-groups, Sri Lankan Tamils and Indian Tamils.
- C. There are about 7% Christians, who are both Tamil and Sinhala.
- D. Most of the Sinhala-speaking are Hindus or Muslims and most of the Tamil speaking are Buddhists.

Which of the above statements are correct?

- (a) A, B, C
- (b) A, B, D
- (c) B, C, D
- (d) A, B, C, D

12. **Assertion :** The new reading culture was accompanied by a new technology.

**Reason :** From hand printing there was a gradual shift to mechanical printing.

- (a) Both assertion and reason are true and reason is the correct explanation of assertion.
- (b) Both assertion and reason are true but reason is not the correct explanation of assertion.
- (c) Assertion is true but reason is false.
- (d) Both assertion and reason are false.

13. **Assertion :** The Indian Union is not based on the principles of federalism.

**Reason :** The Constitution of India declared India as a Union of States.

- (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.

14. What are the kinds of routes through which federations have been formed?

- (a) One route involves independent states coming together on their own to form a bigger unit.
- (b) The second route is where a large country decides to divide its powers between the states and

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the national government.

- (c) Both a and b
- (d) None of these

15. Which among the following is a developmental goal for the landless rural labourers?
- (a) To get electricity and water
  - (b) To educate their children
  - (c) More days of work and better wages
  - (d) To shift to the cities

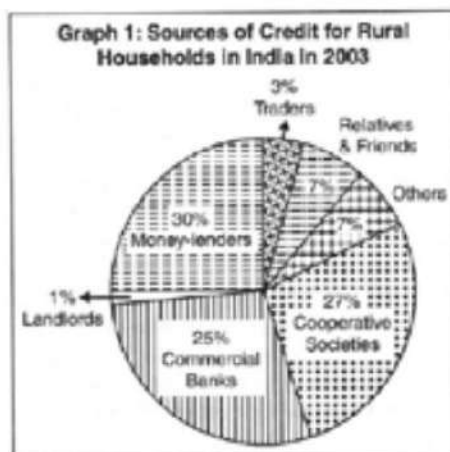
16. Calculate the average income of all members according to the stats in table:

	Member 1	Member 2	Member 3	Member 4
Income	7000	8000	10000	15000

What is the average income of all members according to the stats in table :

- (a) Rs 7,000.
  - (b) Rs 10,000.
  - (c) Rs 15,000.
  - (d) Rs 12,000.
17. Read the information given below and select the correct option :  
 Assume there are four families in a country. The average per capita income of these families is ₹5000. If the income of three families is ₹4000, ₹7000 and ₹3000 respectively, what is the income of the fourth family?
- (a) ₹7500
  - (b) ₹3000
  - (c) ₹2000
  - (d) ₹6000

18. Study the given pie-chart carefully and answer the questions that follow:



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Which is the main source of credit for rural household in India?

- (a) Commercial Banks
- (b) Landlords
- (c) Relatives and Friends
- (d) Money-lenders

19. Consider the following statements regarding collateral and identify the incorrect one from the following:
- (a) Collateral is what pushes the borrower into a painful situation
  - (b) Collateral is the amount that RBI gets from other banks
  - (c) Collateral is an asset that the borrower owns and uses as a guarantee to a lender
  - (d) Collateral is deposit facility like cheque
20. The total production of a year in the three sectors is calculated from\_\_\_\_\_.
- (a) the value of goods calculated separately at all stages of production in that sector
  - (b) the value of final goods produced in that sector
  - (c) the value of final goods and services produced in all the sector
  - (d) the value of final goods and services produced in the three sectors

## SECTION-B

Very Short Answer Question (Q 21 to 24)

2X4=8

21. How had novels been easily available to the masses in Europe during nineteenth century? Explain with examples.
- or**
- Interpret any one fear in the minds of religious authorities and monarchs about the printed texts during 16th century in Europe.
22. Natural gas is considered an environmental friendly fuel. Suggest and explain an three ways to make it popular.
23. What factors sustain democracy in India ?
24. 'The issue of sustainability is important for development.' Examine the statement.

Continue on next page.....

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## SECTION-C

### Short Answer Based Question (Q 25 to 29)

**3X5=15**

25. Describe the role of different religious groups in the development of anti-colonial feelings in Vietnam.
26. How had Indian trade been beneficial for the British during seventeenth century? Explain.  
**or**  
Why did the export of Indian textile decline at the beginning of the nineteenth century? Explain any three reasons.
27. Describe any five features of primitive subsistence farming.
28. Explain any three functions of opposition political parties.
29. How has globalization affected the life of Indians? Explain with examples.

## SECTION-D

### Long Answer Based Question (Q 30 to 33)

**5X4=20**

30. Highlight the reasons for the growth of nationalist tensions in the Balkan region before the First World War.  
**or**  
The Civil Disobedience Movement saw the participation of different social classes and groups. Give reasons for the participation of the following:  
(1) rich peasants  
(2) poor peasants  
(3) business classes  
(4) industrial working classes  
(5) women.
31. What has been the contribution of the Indian Wildlife Protection Act in protecting habitats in India? Explain.

**OR**

Explain any three measures taken by the Indian Government to protect wild life.

**or**

Highlight any three differences between endangered species and extinct species.

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32. Describe the rationale behind the implementation of Decentralisation in India.

or

Describe any three steps taken by the Indian Government towards decentralisation of power in 1992.

33. 'Tertiary sector is playing a significant role in the development of Indian Economy'. Justify the statement.

OR

Why is the tertiary sector becoming more important in India ? Explain.

or

'Public sector contributes to the economic development of India.' Justify the statement.

## SECTION-E

### Case Based Question (Q 34 to 36)

4X3=12

34. Read the sources given below and answer the questions that follows:

*In the first century B.C., Sringaverapura near Allahabad had sophisticated water harvesting system channelling the flood water of the river Ganga. During the time of Chandragupta Maurya, dams, lakes and irrigation systems were extensively built. Evidences of sophisticated irrigation works have also been found in Kalinga (Odisha), Nagarjunakonda (Andhra Pradesh), Bennur (Karnataka), Kolhapur (Maharashtra), etc. In the 11th Century, Bhopal Lake, one of the largest artificial lakes of its time was built. In the 14th Century, the tank in Hauz Khas, Delhi was constructed by Ilutmish for supplying water to Siri Fort area.*

*Sardar Sarovar Dam has been built over the Narmada River in Gujarat. This is one of the largest water resource projects of India covering four states—Maharashtra, Madhya Pradesh, Gujarat and Rajasthan. The Sardar Sarovar project would meet the requirement of water in drought-prone and desert areas of Gujarat (9,490 villages and 173 towns) and Rajasthan (124 villages).*

*Multi-purpose projects and large dams have also been the cause of many new environmental movements like the 'Narmada Bachao Andolan' and the 'Tehri Dam Andolan' etc. Resistance to these projects has primarily been due to the large-scale displacement of local communities. Local people often had to give up their land, livelihood and their meagre access and control over resources for the greater good of the nation.*

Question:

1. During earlier time how did the irrigation done?
2. Why did J L Nehru proclaim the dams as the temples of modern India?
3. How do multi-purpose projects face resistance?

35. Read the extract and answer the questions that follow:

*The Census of India records the religion of each and every Indian after every ten years. The person who fills the Census form visits every household and records the religion of each member of that household exactly the way each person describes it. If someone says she has 'no religion' or that he is an 'atheist', this is exactly how it is recorded. Thus we have reliable information on the proportion*

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of different religious communities in the country and how it has changed over the years. The pie chart below presents the population proportion of six major religious communities in the country. Since Independence, the total population of each community has increased substantially but their proportion in the country's population has not changed much. In percentage terms, the population of the Hindus, Jains and Christians has declined marginally since 1961. The proportion of Muslim, Sikh and Buddhist population has increased slightly. There is a common but mistaken impression that the proportion of the Muslims in the country's population is going to overtake other religious communities. Expert estimates done for the Prime Minister's High Level Committee (popularly known as Sachar Committee) show that the proportion of the Muslims is expected to go up a little, by about 3 to 4 per cent, in the next 50 years. It proves that in overall terms, the population balance of different religious communities is not likely to change in a big way.

Question:

1. What do you mean by atheist?
2. How much growth rate of Muslim population fall in compare to last decadal census?
3. What did happen in population proportion of six major religious communities in India since Independence?

36. Study the sources given below and answer the questions that follow:

Source A – Formal Sector Credit in India

*The various types of loans can be conveniently grouped as formal sector loans and informal sector loans. Among the former are loans from banks and cooperatives. The informal lenders include moneylenders, traders, employers, relatives and friends, etc.*

Source B – Formal and Informal Credit: Who gets what?

*The people are divided into four groups, from poor to rich. 85 per cent of the loans taken by poor households in the urban areas are from informal sources. Compare this with the rich urban households. Only 10 per cent of their loans are from informal sources, while 90 per cent are from formal sources. A similar pattern is also found in rural areas. The rich households are availing cheap credit from formal lenders whereas the poor households have to pay a heavy price for borrowing! What does all this suggest? First, the formal sector still meets only about half of the total credit needs of the rural people. The remaining credit needs are met from informal sources.*

Source C – Formal and Informal Credit: Who gets what?

*Most loans from informal lenders carry a very high interest rate and do little to increase the income of the borrowers. Thus, it is necessary that banks and cooperatives increase their lending particularly in the rural areas, so that the dependence on informal sources of credit reduces.*

Question:

1. Give any one example of formal sector source and of informal sector source of credit in India.
2. Which sector is dominant source of rural credit in India?
3. Why is it necessary to reduce dependence on informal sources of credit?

Continue on next page.....

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## SECTION-F

### Map Skill Based Question (Q 37a and 37b)

2+3=5

37. (1) Two places (a) and (b) are marked on the given political outline map of India. Identify them and write their correct names on the lines drawn near them.
- (a) The place where Indian National Congress Session (Dec. 1920) was held.
  - (b) Movement of Indigo Planters.
- (2) On the same outline map of India, locate and label any three of the following with suitable symbols.
- (a) Kolkata - An International airport
  - (b) Bokaro - An iron and steel plant
  - (c) Thiruvananthapuram - A software technology park
  - (d) Ramagundam - A thermal power plant



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**Sample Paper 1**  
**Social Science (Code 087)**  
**Class X Session 2022-23**

**Time: 3 Hours**

**Max. Marks: 80**

**General Instructions:**

- i. Question paper comprises five Sections – A, B, C, D and E. There are 37 questions in the question paper. All questions are compulsory.
  - ii. Section A – From question 1 to 20 are MCQs of 1 mark each.
  - iii. Section B – Question no. 21 to 24 are Very Short Answer Type Questions, carrying 2 marks each. Answer to each question should not exceed 40 words.
  - iv. Section C contains Q.25 to Q.29 are Short Answer Type Questions, carrying 3 marks each. Answer to each question should not exceed 60 words
  - v. Section D – Question no. 30 to 33 are long answer type questions, carrying 5 marks each. Answer to each question should not exceed 120 words.
  - vi. Section-E - Questions no from 34 to 36 are case based questions with three sub questions and are of 4 marks each.
  - vii. Section F – Question no. 37 is map based, carrying 5 marks with two parts, 37a from History (2 marks) and 37b from Geography (3 marks).
  - viii. There is no overall choice in the question paper. However, an internal choice has been provided in few questions. Only one of the choices in such questions have to be attempted.
  - ix. In addition to this, separate instructions are given with each section and question, wherever necessary.
- 

**SECTION-A**

**Multiple Choice Questions (Q 1 to 20)**

**2X4=8**

1. Which of the following are perfectly matched :

	List I	List II
A.	First European Country to conquer America	Greece
B.	Countries to the east of Mediterranean	Spain
C.	First Asian country to be Industrialised	Japan

- (a) A and C
- (b) Only B
- (c) Only D
- (c) D and A

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2. In the above picture of sorrien's utopian vision, the saints, angle and Christ symbolise-



- (a) Equality among people
- (b) Fraternity among nations
- (c) Freedom of nations
- (d) Resentment against nations

3. Match the following items given in column I with those in column II.

	Column I		Column II
A.	Supervision of functioning of banks.	1.	Japan
B.	First Asian country to be Industrialised.	2.	Henry Ford
C.	Pioneer of the system of mass production.	3.	Secularism
D.	No official religion, constitution does not give any special status.	4.	Reserve Bank of India

Select the correct option :

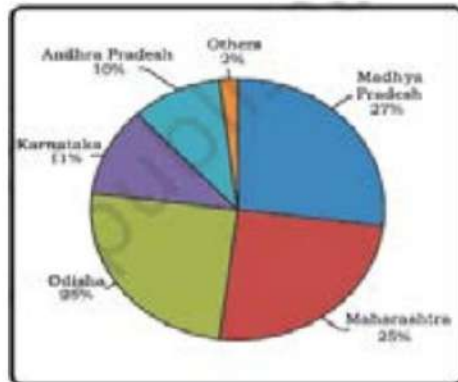
- (a) A → 1, B → 2, C → 3, D → 4
  - (b) A → 4, B → 1, C → 2, D → 3
  - (c) A → 2, B → 3, C → 4, D → 1
  - (d) A → 3, B → 4, C → 1, D → 2
4. Arrange the following events in the ascending year of their occurrence-
1. Britain, exporting iron and steel worth about \$77 million.
  2. Demand for iron and steel increased rapidly with the expansion of railway in England.
  3. Britain was importing 2.5 million pounds of raw cotton to feed its cotton industry.
  4. Britain import of raw cotton soared to 22 million pounds.

Option :

- (a) 2, 4, 3, 1
- (b) 3, 4, 2, 1
- (c) 3, 4, 1, 2
- (d) 2, 3, 1, 4

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5. Which of the following is not a physical factor to determine land use?  
 (a) climate condition  
 (b) soil type  
 (c) topography  
 (d) population density
6. Observe the following picture carefully and choose the correct answer-



- (a) It shows the state wise production of manganese in year 2016-17.  
 (b) It shows the state wise production of iron ore in year 2016-17.  
 (c) It shows the state wise production of stainless steel in year 2016-17.  
 (d) It shows the state wise production of electricity year in the 2016-17.
7. Complete the following table with correct information-

Dams	On the river	State
Bhakra-Nangal	Satluj river	A - ?
Hirakund	B - ?	Odisha

Choose correct option :

- (a) A - Gujarat, B - Narmada  
 (b) A - Punjab, B - Mahanadi  
 (c) A - Gujarat, B - Krishna  
 (d) A - Telangana, B - Krishna

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8. Which of the options best signifies this cartoon-



- (a) Showing the fine German engineering.
- (b) Problems of running the Germany's grand coalition Government that includes the two major parties of the country.
- (c) The two parties of the country are historically partners to each other.
- (d) How smoothly the German Government is running.

9. Identify the Country-

- Is a small country in Europe.
- Shares borders with France, Netherlands, Germany and Luxembourg.
- The government divided the powers equally between Dutch and French speaking populations.
- Power sharing is also seen in political parties.

Select the appropriate option from the following.

- (a) Germany
- (b) Belgium
- (c) Srilanka
- (d) India

10. Which of the following features are common to Indian and Belgian form of power sharing arrangements?

- A. Power is shared among governments at different levels.
  - B. Power is shared among different organs of government.
  - C. Power is shared among different social groups.
  - D. Power is shared among different parties and takes the form of competition.
- (a) A, B, C, D
  - (b) B, C and D
  - (c) A and C
  - (d) A, C and D

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- 11. Assertion :** In 15th the religious reformer Martin Luther wrote Ninety Five Theses criticising many of the practices and rituals of the Roman Catholic Church.  
**Reason :** This led to a division within the Church and to the beginning of the Protestant Reformation.
- (a) Both assertion and reason are true and reason is the correct explanation of assertion.
  - (b) Both assertion and reason are true but reason is not the correct explanation of assertion.
  - (c) Assertion is true but reason is false.
  - (d) Both assertion and reason are false.
- 12. Assertion (A):** Federations that are formed by 'holding together' do not give equal power to its constituent units.  
**Reason (R):** Some states are granted special powers.
- (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.
- 13. Which of the following is incorrect regarding a federal government?**
- (a) Federalism is a system of government in which the power is divided between a central authority and various constituent units of the country.
  - (b) Federation has only one level of government.
  - (c) One is the government for the entire country that is usually responsible for a few subjects of common national interest.
  - (d) The others are governments at the level of provinces or states that look after much of the day-to-day administering of their state.
- 14. How many countries of the world have democratic set-up of government?**
- (a) More than hundred countries
  - (b) Less than hundred countries
  - (c) Less than fifty countries
  - (d) More than fifty countries
- 15. Which one of the following is not a developmental goal for the landless rural labourers?**
- (a) More days of work and better wages.
  - (b) Local school is able to provide quality education for their children.
  - (c) There is no social discrimination.
  - (d) They can not become leaders in the village.

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16. Following table shows the workers in different sectors (in millions)

Sector	Unorganised	Organised	Total
Primary	200	2	202
Secondary	50	5	55
Tertiary	80	20	100
Total	330	27	357
Total in percentage			100%

What is the percentage of people in organised sector?

- (a) 8.4%
  - (b) 9.6%
  - (c) 7.6%
  - (d) 10%
17. Read the information given below and select the correct option :
- A study in Ahmedabad found that out of 15,00,000 workers in the city, 11,00,000 worked in the unorganised sector. The total income of the city in this year (1997-1998) was ₹60,000 million. Out of this ₹32,000 million was generated in the organised section.
- The number of workers in organised sector is
- (a) 4,00,000
  - (b) 5,00,000
  - (c) 10,00,000
  - (d) 39,000
18. Consider the following statements regarding use of money and identify the incorrect one from the following:
- (a) The use of money spans a very large part of our everyday life.
  - (b) When the two parties have to agree to sell and buy each others commodities is called double coincidence of wants.
  - (c) Modern forms of money include currency paper notes and coins.
  - (d) The other form in which people hold money is as promissory note with banks.
19. Which of the following statements is correct with regards to India?
- (a) Tertiary sector contributes the maximum to GDP.
  - (b) India is basically a socialist economy.
  - (c) In India, distribution of income and wealth is quite equitable.
  - (d) None of the above

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20. Which of the following is not applicable for a worker, who works in the organised sector?
- (a) She gets a regular salary at the end of the month.
  - (b) She is not paid for leave.
  - (c) She gets medical allowance.
  - (d) She got an appointment letter stating the terms and conditions of work when she joined this work.

## SECTION-B

Very Short Answer Question (Q 21 to 24)

2X4=8

21. State the basic and main objectives of New Economic Policy.
- or**
- Which factors were responsible for price rise of foodgrains in Britain in late nineteenth century was/were ?
22. Efficient means of transport are pre-requisites for fast development of the country.” Support the statement with examples.
23. “The assertion of social diversities in a democratic country is very normal and can be healthy.” Justify the statement with arguments.
24. Why do banks and cooperative societies need to lend more ? Explain.

## SECTION-C

Short Answer Based Question (Q 25 to 29)

3X5=15

25. Why did Gandhiji start Non-Cooperation Movement? Explain.
- or**
- How did the Non-Cooperation Movement unfold in the cities and towns of India?
26. How had the printing press created a new culture of reading in Europe? Explain with examples.
27. Explain with examples, how do industries give boost to the agriculture sector.
28. State any three important features of Federalism.
29. “Tertiary sector activities help in the development of the primary and secondary sectors.” Evaluate the statement.

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## SECTION-D

### Long Answer Based Question (Q 30 to 33)

5X4=20

30. Describe the impact of the First World war on Indian industries.

or

Describe any three major problems faced by Indian cotton weavers in nineteenth century.

31. Name the two most important cereal crops grown in India. Describe the conditions required to grow these two crops.

or

Give reasons for increasing use of fertilisers in farming.

32. Suggest and explain any five ways to reform Political Parties in India.

or

What are the characteristics of a political party ?

33. "The impact of globalisation has not been uniform." Explain with examples.

or

Describe the role of technology in promoting globalisation process.

## SECTION-E

### Case Based Question (Q 34 to 36)

4X3=12

34. Read the sources given below and answer the questions that follows:

*Oceanic tides can be used to generate electricity. Floodgate dams are built across inlets. During high tide water flows into the inlet and gets trapped when the gate is closed. After the tide falls outside the flood gate, the water retained by the floodgate flows back to the sea via a pipe that carries it through a power-generating turbine.*

*Shrubs, farm waste, animal and human waste are used to produce biogas for domestic consumption in rural areas. Decomposition of organic matter yields gas, which has higher thermal efficiency in comparison to kerosene, dung cake and charcoal. Biogas plants are set up at municipal, cooperative and individual levels. The plants using cattle dung are known as 'Gobar gas plants' in rural India.*

*Nuclear or Atomic Energy is obtained by altering the structure of atoms. When such an alteration is made, much energy is released in the form of heat and this is used to generate electric power. Uranium and Thorium, which are available in Jharkhand and the Aravalli ranges of Rajasthan are used for generating atomic or nuclear power. The Monazite sands of Kerala is also rich in Thorium.*

Question:

1. What will generate by the oceanic tides?
2. What do Gobar Gas plants operated?
3. How atomic energy is obtained?

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35. Read the sources given below and answer the questions that follows:

**Source A– Dignity and Freedom of the Citizens**

Every individual wants to receive respect from fellow beings. Often conflicts arise among individuals because some feel that they are not treated with due respect. The passion for respect and freedom are the basis of democracy. Democracies throughout the world have recognised this, at least in principle. This has been achieved in various degrees in various democracies.

**Source B– Non-democratic Regimes**

Democracy stands much superior to any other form of government in promoting dignity and freedom of the individual. Every individual wants to receive respect from fellow beings. Non-democratic regimes often turn a blind eye to or suppress internal social differences. Ability to handle social differences, divisions and conflicts is thus a definite plus point of democratic regimes. It is necessary to understand that democracy is not simply rule by majority opinion.

**Source C– Strength of Democracy**

Whenever possible and necessary, citizens should be able to participate in decision making that affects them all. Democracy in India has strengthened the claims of the disadvantaged and discriminated castes for equal status and equal opportunity. There are instances still of caste-based inequalities and atrocities, but these lack the moral and legal foundations. Perhaps it is the recognition that makes ordinary citizens value their democratic rights.

**Question:**

1. What are the basis of democracy?
2. Why democracy is considered as the superior form of government?
3. How does the Indian democracy strengthened the claims of the disadvantaged and discriminated castes?

36. Read the extract and answer the questions that follow:

Besides seeking more income, one way or the other, people also seek things like equal treatment, freedom, security, and respect of others. They resent discrimination. All these are important goals. In fact, in some cases, these may be more important than more income or more consumption because material goods are not all that you need to live. Money or material things that one can buy with it, is one factor on which our life depends. But the quality of our life also depends on non-material things mentioned above. If it is not obvious to you, then just think of the role of your friends in your life. You may desire their friendship. Similarly, there are many things that are not easily measured but they mean a lot to our lives. These are often ignored.

For development, people look at a mix of goals. It is true that if women are engaged in paid work, their dignity in the household and society increases. However, it is also the case that if there is respect for women there would be more sharing of housework and a greater acceptance of women working outside. A safe and secure environment may allow more women to take up a variety of jobs or run a business. Hence, the developmental goals that people have are not only about better income but also about other important things in life.

**Question:**

1. What are the things other than income which people seek for living?
2. Write any two developmental goals of middle-class woman.
3. What is the role of other important things than income, in life?



## SECTION-F

### Map Skill Based Question (Q 37a and 37b)

2+3=5

37. (a) Two places A and B have been marked on the given outline map of India. Identify them and write their correct names on the lines drawn near them.
- (A) The place where Indian National Congress session was held in December 1920.  
(B) The place where Salt Law was broken by Mahatma Gandhi.
- (b) On the same outline map of India, locate and label any three of the following with suitable Symbols:
- Paradwip-Major Seaport
  - Noida-Software Technology Park
  - Salem-Iron and Steel industry
  - Kalpakkam-Nuclear Power Plant



□□□□□□

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**Sample Paper 1**  
**Class- X Exam - 2022-23**  
**Mathematics - Basic**

**Time Allowed: 3 Hours**

**Maximum Marks : 80**

**General Instructions :**

1. This Question Paper has 5 Sections A-E.
  2. Section A has 20 MCQs carrying 1 mark each
  3. Section B has 5 questions carrying 02 marks each.
  4. Section C has 6 questions carrying 03 marks each.
  5. Section D has 4 questions carrying 05 marks each.
  6. Section E has 3 case based integrated units of assessment (04 marks each) with sub-parts of the values of 1, 1 and 2 marks each respectively.
  7. All Questions are compulsory. However, an internal choice in 2 Qs of 5 marks, 2 Qs of 3 marks and 2 Questions of 2 marks has been provided. An internal choice has been provided in the 2marks questions of Section E
  8. Draw neat figures wherever required. Take  $\pi = \frac{22}{7}$  wherever required if not stated.
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**Section - A**

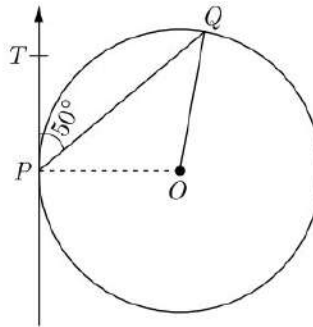
**Section A consists of 20 questions of 1 mark each.**

1. If  $\alpha$  and  $\beta$  are the zeroes of the polynomial  $2x^2 - 13x + 6$ , then  $\alpha + \beta$  is equal to  
(a)  $-3$  (b)  $3$   
(c)  $\frac{13}{2}$  (d)  $-\frac{13}{2}$
2. The point on the  $x$ -axis which is equidistant from the points  $A(-2, 3)$  and  $B(5, 4)$  is  
(a)  $(0, 2)$  (b)  $(2, 0)$   
(c)  $(3, 0)$  (d)  $(-2, 0)$
3. The value of  $k$  for which the system of linear equations  $x + 2y = 3$ ,  $5x + ky + 7 = 0$  is inconsistent is  
(a)  $-\frac{14}{3}$  (b)  $\frac{2}{5}$   
(c)  $5$  (d)  $10$
4. The roots of the quadratic equation  $x^2 - 0.04 = 0$  are  
(a)  $\pm 0.2$  (b)  $\pm 0.02$   
(c)  $0.4$  (d)  $2$
5. A tree casts a shadow 15 m long on the level of ground, when the angle of elevation of the sun is  $45^\circ$ . The height of a tree is  
(a) 10 m (b) 14 m  
(c) 8 m (d) 15 m

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6. A sector is cut from a circular sheet of radius 100 cm, the angle of the sector being  $240^\circ$ . If another circle of the area same as the sector is formed, then radius of the new circle is  
 (a) 79.5 cm (b) 81.5 cm  
 (c) 83.4 cm (d) 88.5 cm
7. The quadratic equation  $2x^2 - \sqrt{5}x + 1 = 0$  has  
 (a) two distinct real roots (b) two equal real roots  
 (c) no real roots (d) more than 2 real roots
8. If the common difference of an AP is 5, then what is  $a_{18} - a_{13}$ ?  
 (a) 5 (b) 20  
 (c) 25 (d) 30
9.  $\Delta ABC$  is an equilateral triangle with each side of length  $2p$ . If  $AD \perp BC$  then the value of  $AD$  is  
 (a)  $\sqrt{3}$  (b)  $\sqrt{3}p$   
 (c)  $2p$  (d)  $4p$
10. In figure,  $O$  is the centre of circle.  $PQ$  is a chord and  $PT$  is tangent at  $P$  which makes an angle of  $50^\circ$  with  $PQ$ .  $\angle POQ$  is



- (a)  $130^\circ$  (b)  $90^\circ$   
 (c)  $100^\circ$  (d)  $75^\circ$
11. If  $\cos(\alpha + \beta) = 0$ , then  $\sin(\alpha - \beta)$  can be reduced to  
 (a)  $\cos \beta$   
 (b)  $\cos 2\beta$   
 (c)  $\sin \alpha$   
 (d)  $\sin 2\alpha$
12. The base radii of a cone and a cylinder are equal. If their curved surface areas are also equal, then the ratio of the slant height of the cone to the height of the cylinder is  
 (a) 2 : 1 (b) 1 : 2  
 (c) 1 : 3 (d) 3 : 1

13. In a frequency distribution, the mid value of a class is 10 and the width of the class is 6. The lower limit of the class is  
(a) 6 (b) 7  
(c) 8 (d) 12
14. If a card is selected from a deck of 52 cards, then the probability of its being a red face card is  
(a)  $\frac{3}{26}$  (b)  $\frac{3}{13}$   
(c)  $\frac{2}{13}$  (d)  $\frac{1}{2}$
15. The point  $P$  on  $x$ -axis equidistant from the points  $A(-1, 0)$  and  $B(5, 0)$  is  
(a)  $(2, 0)$  (b)  $(0, 2)$   
(c)  $(3, 0)$  (d)  $(-3, 5)$
16. If one zero of the polynomial  $(3x^2 + 8x + k)$  is the reciprocal of the other, then value of  $k$  is  
(a) 3 (b)  $-3$   
(c)  $\frac{1}{3}$  (d)  $-\frac{1}{3}$
17. If  $3x + 4y : x + 2y = 9 : 4$ , then  $3x + 5y : 3x - y$  is equal to  
(a)  $4 : 1$  (b)  $1 : 4$   
(c)  $7 : 1$  (d)  $1 : 7$
18. The distance between the points  $(a \cos \theta + b \sin \theta, 0)$ , and  $(0, a \sin \theta - b \cos \theta)$  is  
(a)  $a^2 + b^2$  (b)  $a^2 - b^2$   
(c)  $\sqrt{a^2 + b^2}$  (d)  $\sqrt{a^2 - b^2}$
19. **Assertion :** Sum of first 10 terms of the arithmetic progression  $-0.5, -1.0, -1.5, \dots$  is 31.  
**Reason :** Sum of  $n$  terms of an AP is given as  $S_n = \frac{n}{2}[2a + (n-1)d]$  where  $a$  is first term and  $d$  common difference.  
(a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).  
(b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).  
(c) Assertion (A) is true but reason (R) is false.  
(d) Assertion (A) is false but reason (R) is true.
20. **Assertion :** When a positive integer  $a$  is divided by 3, the values of remainder can be 0, 1 or 2.  
**Reason :** According to Euclid's Division Lemma  $a = bq + r$ , where  $0 \leq r < b$  and  $r$  is an integer.  
(a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).  
(b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).  
(c) Assertion (A) is true but reason (R) is false.  
(d) Assertion (A) is false but reason (R) is true.

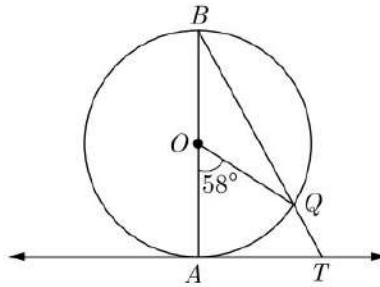
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## Section - B

Section B consists of 5 questions of 2 marks each.

21.  $ABCD$  is a trapezium in which  $AB \parallel CD$  and its diagonals intersect each other at the point  $O$ . Show that  $\frac{AO}{BO} = \frac{CO}{DO}$ .
22. In given figure,  $AB$  is the diameter of a circle with centre  $O$  and  $AT$  is a tangent. If  $\angle AOQ = 58^\circ$ , find  $\angle ATQ$ .



23. Find the value of  $\cos 2\theta$ , if  $2 \sin \theta = \sqrt{3}$ .
24. Find the mean of the following distribution :

Class	10-25	25-40	40-55	55-70	70-85	85-100
Frequency	2	3	7	6	6	6

OR

Find the mean of the following data :

Class	0- 20	20-40	40-60	60-80	80-100	100- 120
Frequency	20	35	52	44	38	31

25. Show that  $5\sqrt{6}$  is an irrational number.

OR

Write a rational number between  $\sqrt{2}$  and  $\sqrt{3}$ .

## Section - C

Section C consists of 6 questions of 3 marks each.

26. Which term of the AP  $20, 19\frac{1}{4}, 18\frac{1}{2}, 17\frac{3}{4}, \dots$  is the first negative term.
27. If  $1 + \sin^2\theta = 3 \sin\theta \cos\theta$ , prove that  $\tan\theta = 1$  or  $\frac{1}{2}$ .

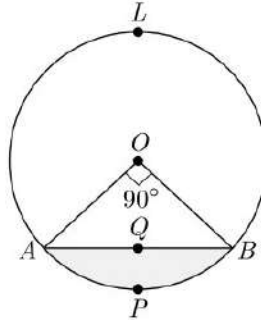
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28. A horse is tethered to one corner of a rectangular field of dimensions  $70\text{ m} \times 52\text{ m}$ , by a rope of length  $21\text{ m}$ . How much area of the field can it graze?

OR

In the given figure, a chord  $AB$  of the circle with centre  $O$  and radius  $10\text{ cm}$ , that subtends a right angle at the centre of the circle. Find the area of the minor segment  $AQB$ . Hence find the area of major segment  $ALBQA$ . (Use  $\pi = 3.14$ )



29. Find the mode of the following frequency distribution :

Class	15-20	20-25	25-30	30-35	35-40	40-45
Frequency	3	8	9	10	3	2

30. Find the ratio in which the segment joining the points  $(1, -3)$  and  $(4, 5)$  is divided by  $x$ -axis? Also find the coordinates of this point on  $x$ -axis.

OR

The vertices of  $\Delta ABC$  are  $A(6, -2)$ ,  $B(0, -6)$  and  $C(4, 8)$ . Find the co-ordinates of mid-points of  $AB$ ,  $BC$  and  $AC$ .

31. Write the smallest number which is divisible by both  $306$  and  $657$ .

## Section - D

Section D consists of 4 questions of 5 marks each.

32. Determine graphically the coordinates of the vertices of triangle, the equations of whose sides are given by  $2y - x = 8$ ,  $5y - x = 14$  and  $y - 2x = 1$ .

OR

Draw the graphs of the equations  $x - y + 1 = 0$  and  $3x + 2y - 12 = 0$ . Determine the co-ordinates of the vertices of the triangle formed by these lines and the  $X$ -axis and shade the triangular region.

33. Two tangents  $PA$  and  $PB$  are drawn from an external point  $P$  to a circle with centre  $O$ , such that  $\angle APB = \angle x$  and  $\angle AOB = y$ . Prove that opposite angles are supplementary.

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34. The person standing on the bank of river observes that the angle of elevation of the top of a tree standing on opposite bank is  $60^\circ$ . When he moves 30 m away from the bank, he finds the angle of elevation to be  $30^\circ$ . Find the height of tree and width of the river.

OR

As observed from the top of a 100 m high light house from the sea-level, the angles of depression of two ships are  $30^\circ$  and  $45^\circ$ . If one ship is exactly behind the other on the same side of the light house, find the distance between the two ships [Use  $\sqrt{3} = 1.732$ ]

35. A hemispherical depression is cut from one face of a cubical block, such that diameter  $l$  of hemisphere is equal to the edge of cube. Find the surface area of the remaining solid.

## Section - E

Case study based questions are compulsory.

36. Maximum Profit : A kitchen utensils manufacturer can produce up to 200 utensils per day. The profit made from the sale of these utensils can be modelled by the function  $P(x) = -0.5x^2 + 175x - 330$ , where  $P(x)$  is the profit in Rupees, and  $x$  is the number of utensils made and sold. Based on this model,
- Find the  $y$ -intercept and explain what it means in this context.
  - Find the  $x$ -intercepts and explain what they mean in this context.
  - How many utensils should be sold to maximize profit?

OR

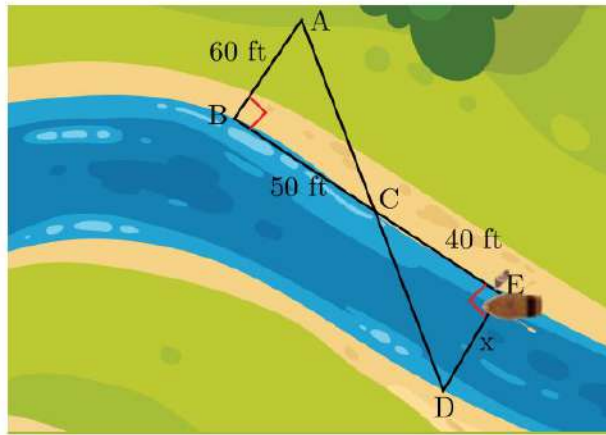
What is the maximum profit?



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37. Tania is very intelligent in maths. She always try to relate the concept of maths in daily life. One day she plans to cross a river and want to know how far it is to the other side. She takes measurements on her side of the river and make the drawing as shown below.



- (i) Which similarity criterion is used in solving the above problem ?  
 (ii) Consider the following statement :

$$S_1 : \angle ACB = \angle DCE$$

$$S_2 : \angle BAC = \angle CDE$$

Which of the above statement is/are correct.

- (a)  $S_1$  and  $S_2$  both  
 (b)  $S_1$   
 (c)  $S_2$   
 (d) None

- (iii) Consider the following statement :

$$S_3 : \frac{AB}{DE} = \frac{CA}{CD}$$

$$S_4 : \frac{BC}{CE} = \frac{AB}{DE}$$

$$S_5 : \frac{CA}{CD} = \frac{DE}{AB}$$

Which of the above statements are correct ?

- (a)  $S_3$  and  $S_5$   
 (b)  $S_4$  and  $S_5$   
 (c)  $S_3$  and  $S_1$   
 (d) All three

- (iv) What is the distance  $x$  across the river?

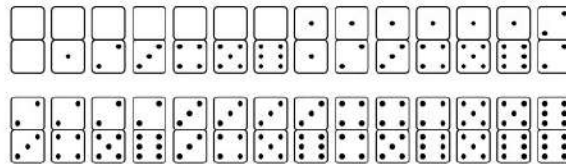
OR

What is the approximate length of AD shown in the figure?

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38. Double-six Dominos : It is a game played with the 28 numbered tiles shown in the diagram.



The 28 dominos are placed in a bag, shuffled, and then one domino is randomly drawn. Give the following answer.

- (i) What is the probability the total number of dots on the domino is three or less ?
- (ii) What is the probability the total number of dots on the domino is greater than three ?
- (iii) What is the probability the total number of dots on the domino does not have a blank half ?

OR

What is the probability the total number of dots on the domino is not a “double” (both sides the same) ?

□□□□□□

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**Sample Paper 2**  
**Class- X Exam - 2022-23**  
**Mathematics - Basic**

**Time Allowed: 3 Hours**

**Maximum Marks : 80**

**General Instructions :**

1. This Question Paper has 5 Sections A-E.
  2. Section A has 20 MCQs carrying 1 mark each
  3. Section B has 5 questions carrying 02 marks each.
  4. Section C has 6 questions carrying 03 marks each.
  5. Section D has 4 questions carrying 05 marks each.
  6. Section E has 3 case based integrated units of assessment (04 marks each) with sub-parts of the values of 1, 1 and 2 marks each respectively.
  7. All Questions are compulsory. However, an internal choice in 2 Qs of 5 marks, 2 Qs of 3 marks and 2 Questions of 2 marks has been provided. An internal choice has been provided in the 2marks questions of Section E
  8. Draw neat figures wherever required. Take  $\pi = \frac{22}{7}$  wherever required if not stated.
- 

**Section - A**

**Section A consists of 20 questions of 1 mark each.**

1. The maximum number of zeroes a cubic polynomial can have, is  
(a) 1 (b) 4  
(c) 2 (d) 3
2. A fraction becomes 4 when 1 is added to both the numerator and denominator and it becomes 7 when 1 is subtracted from both the numerator and denominator. The numerator of the given fraction is  
(a) 2 (b) 3  
(c) 5 (d) 15
3. If the point  $P(6, 2)$  divides the line segment joining  $A(6, 5)$  and  $B(4, y)$  in the ratio 3:1 then the value of  $y$  is  
(a) 4 (b) 3  
(c) 2 (d) 1
4. If  $x - 2y + k = 0$  is a median of the triangle whose vertices are at points  $A(-1, 3)$ ,  $B(0, 4)$  and  $C(-5, 2)$ , then the value of  $k$  is  
(a) 2 (b) 4  
(c) 6 (d) 8
5. The pair of linear equations  $2kx + 5y = 7$ ,  $6x - 5y = 11$  has a unique solution, if  
(a)  $k \neq -3$  (b)  $k \neq \frac{2}{3}$   
(c)  $k \neq 5$  (d)  $k \neq \frac{2}{9}$

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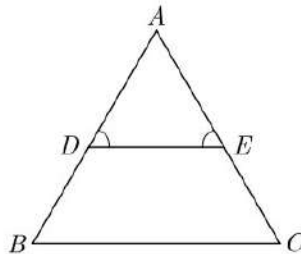
6. The linear factors of the quadratic equation  $x^2 + kx + 1 = 0$  are  
(a)  $k \geq 2$  (b)  $k \leq 2$   
(c)  $k \geq -2$  (d)  $2 \leq k \leq -2$
7. A circle artist is climbing a 20 m long rope, which is tightly stretched and tied from the top of a vertical pole to the ground, then the height of pole, if the angle made by the rope with the ground level is  $30^\circ$ , is  
(a) 5 m (b) 10 m  
(c) 15 m (d) 20 m
8. If the area of a semi-circular field is 15400 sq m, then perimeter of the field is  
(a)  $160\sqrt{2}$  m (b)  $260\sqrt{2}$  m  
(c)  $360\sqrt{2}$  m (d)  $460\sqrt{2}$  m
9. In an AP, if  $d = -4$ ,  $n = 7$  and  $a_n = 4$ , then  $a$  is equal to  
(a) 6 (b) 7  
(c) 20 (d) 28
10. The 4th term from the end of an AP  $-11, -8, -5, \dots, 49$  is  
(a) 37 (b) 40  
(c) 43 (d) 58
11. In a right angled  $\Delta ABC$  right angled at  $B$ , if  $P$  and  $Q$  are points on the sides  $AB$  and  $BC$  respectively, then  
(a)  $AQ^2 + CP^2 = 2(AC^2 + PQ^2)$  (b)  $2(AQ^2 + CP^2) = AC^2 + PQ^2$   
(c)  $AQ^2 + CP^2 = AC^2 + PQ^2$  (d)  $AQ + CP = \frac{1}{2}(AC + PQ)$
12. A chord of a circle of radius 10 cm, subtends a right angle at its centre. The length of the chord (in cm) is  
(a)  $\frac{5}{\sqrt{2}}$  (b)  $5\sqrt{2}$   
(c)  $10\sqrt{2}$  (d)  $10\sqrt{3}$
13. If  $\Delta ABC$  is right angled at  $C$ , then the value of  $\cos(A + B)$  is  
(a) 0 (b) 1  
(c)  $\frac{1}{2}$  (d)  $\frac{\sqrt{3}}{2}$
14. Ratio of lateral surface areas of two cylinders with equal height is  
(a) 1 : 2 (b)  $H : h$   
(c)  $R : r$  (d) None of these
15. For finding the popular size of readymade garments, which central tendency is used?  
(a) Mean (b) Median  
(c) Mode (d) Both Mean and Mode

16. When a die is thrown, the probability of getting an odd number less than 3 is  
 (a)  $\frac{1}{6}$  (b)  $\frac{1}{3}$   
 (c)  $\frac{1}{2}$  (d) 0
17. The ratio in which the point  $(2, y)$  divides the join of  $(-4, 3)$  and  $(6, 3)$ , hence the value of  $y$  is  
 (a)  $2:3, y = 3$  (b)  $3:2, y = 4$   
 (c)  $3:2, y = 3$  (d)  $3:2, y = 2$
18. The sum of exponents of prime factors in the prime-factorisation of 196 is  
 (a) 3 (b) 4  
 (c) 5 (d) 2
19. **Assertion :**  $(2 - \sqrt{3})$  is one zero of the quadratic polynomial then other zero will be  $(2 + \sqrt{3})$ .  
**Reason :** Irrational zeros (roots) always occurs in pairs.  
 (a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).  
 (b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).  
 (c) Assertion (A) is true but reason (R) is false.  
 (d) Assertion (A) is false but reason (R) is true.
20. **Assertion :** The equation  $x^2 + 3x + 1 = (x - 2)^2$  is a quadratic equation.  
**Reason :** Any equation of the form  $ax^2 + bx + c = 0$  where  $a \neq 0$ , is called a quadratic equation.  
 (a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).  
 (b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).  
 (c) Assertion (A) is true but reason (R) is false.  
 (d) Assertion (A) is false but reason (R) is true.

## Section - B

Section B consists of 5 questions of 2 marks each.

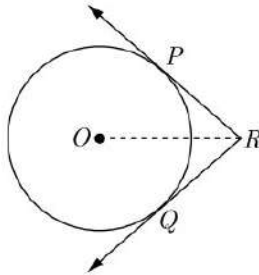
21. In Figure  $\angle D = \angle E$  and  $\frac{AD}{DB} = \frac{AE}{EC}$ , prove that  $\Delta BAC$  is an isosceles triangle.



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22. In figure, two tangents  $RQ$  and  $RP$  are drawn from an external point  $R$  to the circle with centre  $O$ . If  $\angle PRQ = 120^\circ$ , then prove that  $OR = PR + RQ$ .



23. If  $\sqrt{3} \sin \theta - \cos \theta = 0$  and  $0^\circ < \theta < 90^\circ$ , find the value of  $\theta$ .
24. Find the value of  $\lambda$ , if the mode of the following data is 20 :  
15, 20, 25, 18, 13, 15, 25, 15, 18, 17, 20, 25, 20,  $\lambda$ , 18.

OR

The mean and median of 100 observation are 50 and 52 respectively. The value of the largest observation is 100. It was later found that it is 110. Find the true mean and median.

25. Prove that  $3 + \sqrt{5}$  is an irrational number.

OR

Show that any positive even integer can be written in the form  $6q, 6q + 2$  or  $6q + 4$ , where  $q$  is an integer.

## Section - C

Section C consists of 6 questions of 3 marks each.

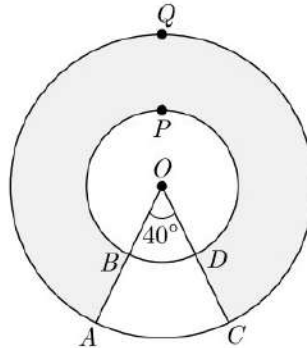
26. Show that the sum of all terms of an AP whose first term is  $a$ , the second term is  $b$  and last term is  $c$ , is equal to  $\frac{(a+c)(b+c-2a)}{2(b-a)}$
27. Prove that  $(1 + \cot A - \operatorname{cosec} A)(1 + \tan A + \sec A) = 2$
28. Sides of a right triangular field are 25 m, 24 m and 7 m. At the three corners of the field, a cow, a buffalo and a horse are tied separately with ropes of 3.5 m each to graze in the field. Find the area of the field that cannot be grazed by these animals.

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OR

In the given figure, find the area of the shaded region, enclosed between two concentric circles of radii 7 cm and 14 cm where  $\angle AOC = 40^\circ$ . Use  $\pi = \frac{22}{7}$ .



29. The mean of the following distribution is 48 and sum of all the frequency is 50. Find the missing frequencies  $x$  and  $y$ .

Class	20-30	30-40	40-50	50-60	60-70
Frequency	8	6	$x$	11	$y$

30. If the co-ordinates of points  $A$  and  $B$  are  $(-2, -2)$  and  $(2, -4)$  respectively, find the co-ordinates of  $P$  such that  $AP = \frac{3}{7}AB$ , where  $P$  lies on the line segment  $AB$ .

OR

Find the co-ordinates of the points of trisection of the line segment joining the points  $A(1, -2)$  and  $B(-3, 4)$ .

31. Three bells toll at intervals of 9, 12, 15 minutes respectively. If they start tolling together, after what time will they next toll together?

## Section - D

Section D consists of 4 questions of 5 marks each.

32. Aftab tells his daughter, '7 years ago, I was seven times as old as you were then. Also, 3 years from now, I shall be three times as old as you will be.' Represent this situation algebraically and graphically.

OR

Solve the following pair of linear equations graphically:

$$x - y = 1, 2x + y = 8$$

Also find the co-ordinates of the points where the lines represented by the above equation intersect  $y$ - axis.

33. From a point  $T$  outside a circle of centre  $O$ , tangents  $TP$  and  $TQ$  are drawn to the circle. Prove that  $OT$  is the right bisector of line segment  $PQ$ .

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34. From a point on the ground, the angles of elevation of the bottom and the top of a tower fixed at the top of a 20 m high building are  $45^\circ$  and  $60^\circ$  respectively. Find the height of the tower.

OR

The angle of elevation of the top  $B$  of a tower  $AB$  from a point  $X$  on the ground is  $60^\circ$ . At point  $Y$ , 40 m vertically above  $X$ , the angle of elevation of the top is  $45^\circ$ . Find the height of the tower  $AB$  and the distance  $XB$ .

35. Water is flowing through a cylindrical pipe, of internal diameter 2 cm, into a cylindrical tank of base radius 40 cm, at the rate of 0.4 m/s. Determine the rise in level of water in the tank in half an hour.

## Section - E

Case study based questions are compulsory.

36. John and Priya went for a small picnic. After having their lunch Priya insisted to travel in a motor boat. The speed of the motor boat was 20 km/hr. Priya being a Mathematics student wanted to know the speed of the current. So she noted the time for upstream and downstream.



She found that for covering the distance of 15 km the boat took 1 hour more for upstream than downstream.

- (i) Let speed of the current be  $x$  km/hr. then speed of the motorboat in upstream will be
- (ii) What is the relation between speed distance and time?
- (iii) Write the correct quadratic equation for the speed of the current ?

OR

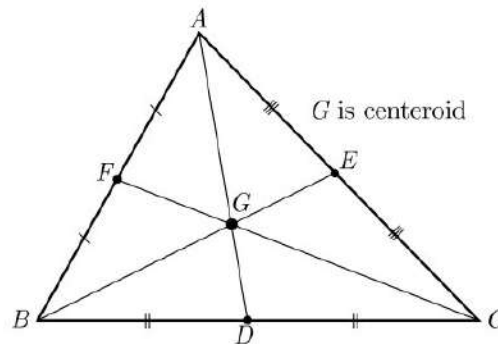
- (iv) What is the speed of current ?

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37. The centroid is the centre point of the object. It is also defined as the point of intersection of all the three medians. The median is a line that joins the midpoint of a side and the opposite vertex of the triangle. The centroid of the triangle separates the median in the ratio of 2 : 1. It can be found by taking the average of x- coordinate points and y-coordinate points of all the vertices of the triangle.

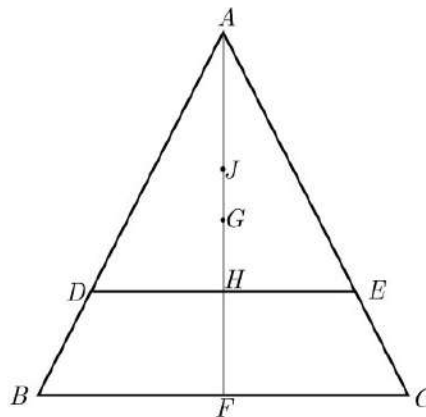
See the figure given below



Here  $D, E$  and  $F$  are mid points of sides  $BC, AC$  and  $AB$  in same order.  $G$  is centroid, the centroid divides the median in the ratio 2 : 1 with the larger part towards the vertex. Thus  $AG : GD = 2 : 1$

On the basis of above information read the question below.

If  $G$  is Centroid of  $\triangle ABC$  with height  $h$  and  $J$  is centroid of  $\triangle ADE$ . Line  $DE$  parallel to  $BC$ , cuts the  $\triangle ABC$  at a height  $\frac{h}{4}$  from  $BC$ .  $HF = \frac{h}{4}$ .



- (i) What is the length of  $AH$  ?
- (ii) What is the distance of point  $A$  from point  $G$ ?
- (iii) What is the distance of point  $A$  from point  $J$ ?

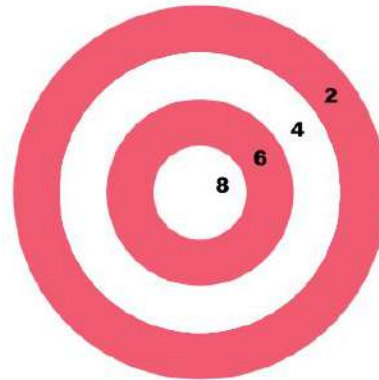
OR

- (iv) What is the distance  $GJ$  ?

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38. Abhinav Bindra is retired sport shooter and currently India's only individual Olympic gold medalist. His gold in the 10-meter air rifle event at the 2008 Summer Olympics was also India's first Olympic gold medal since 1980. He is the first Indian to have held concurrently the world and Olympic titles for the men's 10-meter air rifle event, having earned those honors at the 2008 Summer Olympics and the 2006 ISSF World Shooting Championships. Bindra has also won nine medals at the Commonwealth Games and three gold medals at the Asian Games.



A circular dartboard has a total radius of 8 inch, with circular bands that are 2 inch wide, as shown in figure. Abhinav is still skilled enough to hit this board 100% of the time so he always score at least two points each time he throw a dart. Assume the probabilities are related to area, on the next dart that he throw.

- (i) What is the probability that he score at least 4 ?
- (ii) What is the probability that he score at least 6 ?
- (iii) What is the probability that he hit bull's eye ?

OR

- (iv) What is the probability that he score exactly 4 points ?

□□□□□□

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