BHARTIYA SHIKSHA BOARD
SAMPLE QUESTION PAPER 2025-26
CLASS - X
SCIENCE (037)

Max.Marks-80 **Time:3 hours**

General Instructions:

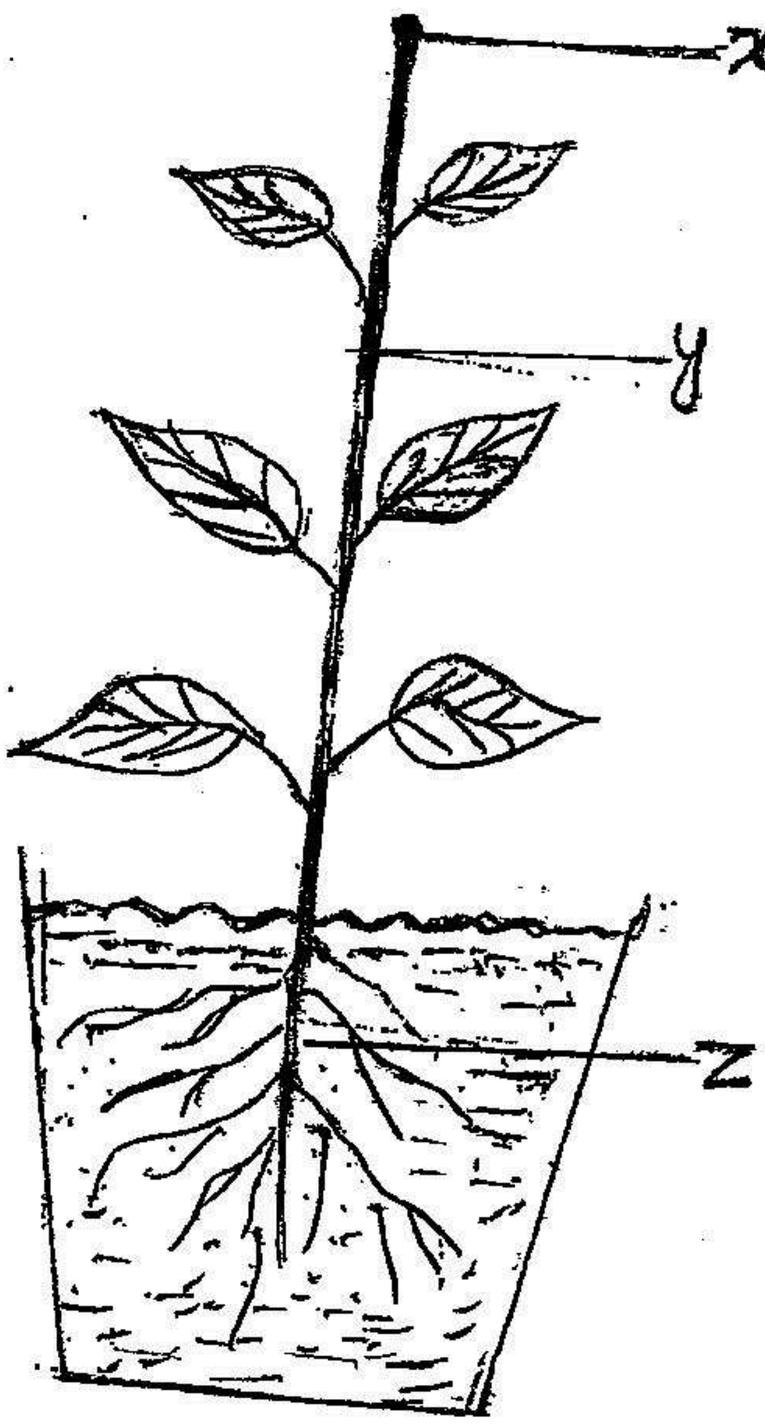
1. All questions would be compulsory. However, an internal choice of approximately 33% would be provided. 50% marks are to be allotted to competency-based questions.
2. Section A would have 16 simple/complex MCQs and 04 Assertion-Reasoning type questions carrying 1 mark each.
3. Section B would have 6 Short Answer (SA) type questions carrying 02 marks each.
4. Section C would have 7 Short Answer (SA) type questions carrying 03 marks each.
5. Section D would have 3 Long Answer (LA) type questions carrying 05 marks each.
6. Section E would have 3 source based/case based/passage based/integrated units of assessment (04 marks each) with sub-parts of the values of 1/2/3 marks.

Q.No.	Question	Marks
	Section - A.	
	Question 1 to 2016 are multiple choice questions. Only one of the choices is correct. Select and write the correct choice as well as the answer to these questions.	
1.	The electronic configuration of three elements P, Q and R are P = 2, 8, 1 Q = 2, 8, 6 R = 2 (A). P and R forms electrovalent compounds (B) Q and R forms electrovalent compounds (C) P and Q forms electrovalent compounds (D) P and R forms co-valent compounds	1
(2)	The pH of three solutions is given in a table below.	1

Solutions	pH
Sulphuric acid	1
baking soda	10
potassium hydroxide	13

Q.No.	Question	Marks
	What would happen to the pH of an acid and a base when each is diluted with pure distilled water?	
	(A) The pH of acid would decrease and of the base would increase.	
	(B) The pH of an acid would increase and of the base would decrease.	
	(C) The pH of both acid and base would increase.	
	(D) The pH of both acid and base would decrease.	
3.	Which of the following is an example of displacement reaction?	1
	(A) Formation of slaked lime	
	(B) Electrolysis of water	
	(C) Reaction of metal with acid	
	(D) Formation of precipitate from two salt solutions	

Q.No.	Question	Marks
4.	A student took a potted plant and cut off the part 'x'. He then took the plant and kept it near a glass window and observed it after 10 days.	1



Which of the following is the likely to be observed by

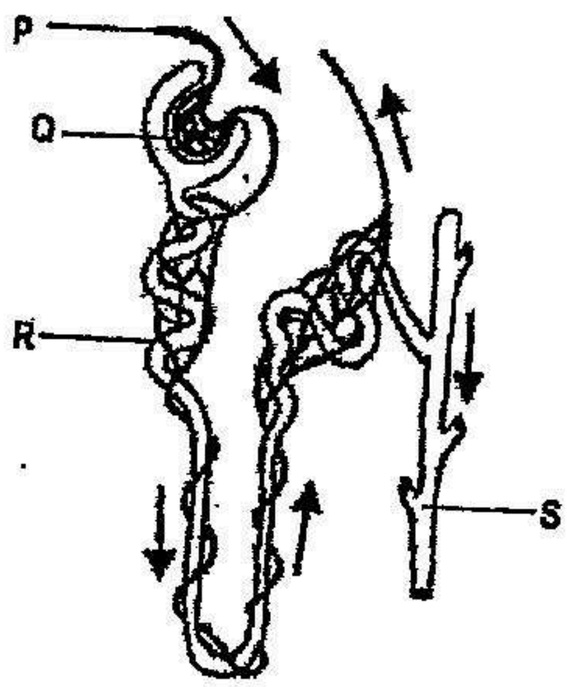
(A) Part 'y' grew and bent towards the window.

(B) Part 'y' grew upward

(C) Part 'z' grew upward and came out of the soil

(D) Part 'y' did not grow at all.

Q. No.	Question	Marks
5.	Given here is a diagram of a unit of excretory system.	1



Which pair from the following Table correctly shows where filteration and selective absorption take place

	Filtration	Selective reabsorption
(A)	P	Q
(B)	Q	S
(C)	Q	R
(D)	P	R

Q. No.	Question	Marks
6	In one of the experiment conducted by Mendel, consisted of breeding tall pea pea plants bearing violet flowers with short pea plants bearing white flowers. ~~The Progeny~~ All the progenies produced bore violet flowers but almost half of them were short. This suggest that the genetic make-up of the tall parents can be depicted as (A) TTWW (B) TTww (C) Ttww (D) TtWW	1

Q. No.	Question	Marks
7.	Potential difference between a live wire and neutral wire is (A) 200V (B) 150V (C) 220 V (D) 210 V	1
8.	What will happen if the organism at 2nd trophic level is missing in the given food chain? Dear Plants ⟶ Rabbit ⟶ Wolf ⟶ Tiger The population of ~~organisms at~~ (A) 1st trophic level decreases and IIIrd increases (B) 1st trophic level increases and IIIrd decreases (C) 1st trophic level and (A) plants decreases and wolves increase (B) plants increase and wolves decrease (C) plants increases and wolves also increase (D) plants ~~increase~~ decrease and, wolves ~~do~~ start eating plants.	

Q. No.	Question	Marks
9.	A student took a pale green substance 'P' in a test tube and heated it over the flame of a burner. A brown coloured residue 'Q' was formed along with the evolution of two gases with a burning smell of ~~st~~ sulphur. The substances 'P' and 'Q' are:	1

	P	Q
(A)	$FeSO_4$	SO_2
(B)	$Fe_2(SO_4)_3$	Fe_2O_3
(C)	$FeSO_4$	Fe_2O_3
(D)	$FeSO_4$	FeO

10.	If salivary amylase is lacking in the saliva, which of the following events in the mouth cavity will be affected?	
	(A) Protein breaking down into amino acids	
	(B) Starch breaking down into sugar.	
	(C) Fats breaking down into fatty acid and glycerols	
	(D) Absorption of food.	

Q. No.	Question	Marks
11.	The number of C-H bonds in ethane (C_2H_6) molecules are	
	(A) 4	
	(B) 6	
	(C) 8	
	(D) 10	
12.	During contraction of heart, what prevents back-flow of blood?	
	(A) Valves in heart	
	(B) Thin muscular walls of atrium	
	(C) Thick muscular walls of ventricles	
	(D) Thin muscular walls of ventricles.	
13.	If ammeter has 10 divisions between 0 to 0.5 A. Then what is the ammeter reading corresponding to 16th division?	
	(A) 0.6 A (C) 1.0 A	
	(B) 0.8 A (D) 1.6 A	

Q. No.	Question	Marks
14	Which one of the following is a base ~~and~~ but not alkali ?	1
	(A) KOH (C) NH_4OH	
	(B) NaOH (D) $Fe(OH)_3$	
15.	Which of the following group contain only biodegradable items ?	1
	(i) grass, flower and plastic bottle	
	(ii) grass wood and glass	
	(iii) grass, fruit peels and dung cake	
	(iv) grass, glass and plastic bottle	
	Choose the most appropriate option :	
	(A) (i) only	
	(B) both (ii) and (iv) only	
	(C) only (iii)	
	(D) only (iv)	
16		

Q. No.	Question	Marks
16	If a hybrid generation is created with a pair of contrasting traits, the recessive trait is expressed in - (A) F_1 generation (C) F_3 generation (B) F_2 generation (D) F_1 and F_2 generations both.	
	Q. No. 17 to 20 are Assertion - Reason based questions :	
	These questions consist of two statements - Assertion (A) and Reason (R). Answer these questions selecting the appropriate option given below :	
(A)	Both (A) and (R) are true and (R) is the correct explanation of (A).	
(B)	Both (A) and (R) are true 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.	

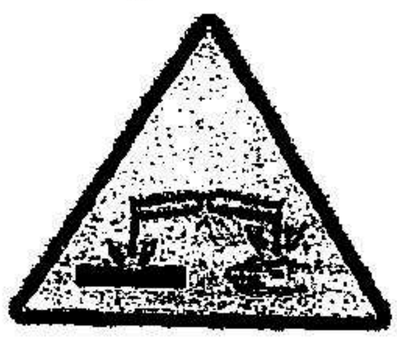
Q. No.	Question	Marks
17	Assertion (A) : ~~At puberty~~ Hibiscus is a unisexual flower..	1
	Reason (R) : A flower.	
17.	(Human) Assertion (A) : Testes in males are located ~~outside~~ the abdominal cavity in scrotum.	1
	Reason (R) : Sperms formation requires a lower temperature than normal body temperature.	
18.	Assertion (A) : Covalent compounds have high melting and boiling point.	1
	Reason (R) : Covalently bonded molecules have weak intermolecular forces.	

Q. No.	Question:	Marks
19.	Assertion (A): When copper oxide is added to dilute dil hydrochloric acid, the colour of the solution become blue-green. Reason (R): Blue green colour of the solution is due to the formation Copper(II) chloride.	1
20.	Assertion (A): At high temperature, metal wires have a greater chance of short circuiting. Reason (R): Both resistance and resitivity of a material vary with temperature.	1

Q.No.	Question	Marks
	Section - B	
	Q- No-21 to 26 are very short answer questions.	
21 (A)	Why do multicellular animals need a respiratory pigment ?	2
	or	
(B)	Name the blood vessel which has thick and elastic walls. Give reason why does this blood vessel has this structure?	
22 (A)	What is the correct sequence of events taking place when human eye changes its focus from a distant object to an object closes to the eye?	2
	or	
(B)	Why is the colour of the clear sky blue?	

Q.No.	Question	Marks
23	(a) A student found that a mixture of acid and base does not change the colour of either blue or red litmus. What would be the amounts of H_3O^+ or H^+ and OH^- in the solution.	2
	(b) In the following list of acids, separate strong acid/s from weak acids. Hydrochloric acid, formic acid, nitric acid, citric acid, acetic acid.	
24.	You are given three identical 20 ohm resistors and a 12 V battery. Draw a circuit diagram to show how the resistors can be connected with the 12 V battery so that the total heat produced is in the circuit is minimum.	2

Q.No.	Question	Marks
25	"All plants give out oxygen during day and carbon dioxide during night." How can you justify this statment.? give reason.	2
26.	Colonies of Yeast fail to reproduce in water but they grow in sugar solution. Give reason for this.	2
	Section - C Q. No. 27 to 33 are short answer questions.	
27	If the image formed by a lens for all positions of an object is placed in front of it is always erect and diminished, what is the nature of this lens? Draw a ray diagram to justify	3

Q.No.	Question	Marks
	your answer. If the numerical value of the power of this lens is 20D, What is its focal length?	
28 (a) A	While playing in a park, a child was stung by a wasp. Some elder, sitting there, suggested to apply a paste of baking soda and others tamrind water as remedy. Which remedy do you think is appropriate and why?	3
(b)	Name the indicator solution which shows different colours at different concentration of ions in the solution.	
	OR.	
B	In a Science laboratory, there are containers having warning signs on them. Why are warning signs given here displayed on these containers? 	

Q.No.	Question	Marks
(b)	You are provided with 90 mL of distilled water and 10 mL of concentrated sulphuric acid to prepare dilute sulphuric acid. What is the correct way of preparing dilute sulphuric acid ? Give reason.	
29. (c)	Students of 10th Class studeats made a survey in their school. They observed 300 students for their eye colour. They found 291 students had either black or brown eyes, only 09 students had blue eyes. Based on this observation, Suggest a rule for the inheritance of eye colour.	3
30 (a)	Mention two ways by which energy is lost from the trophic levels in the eco-system.	

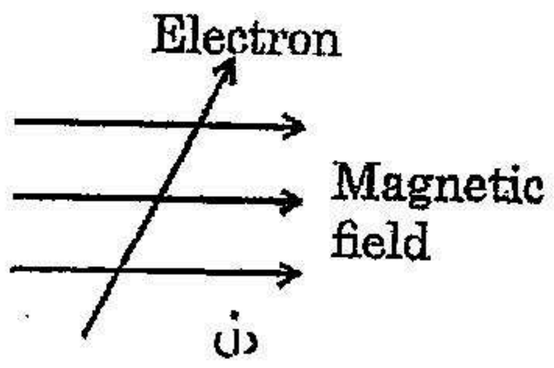
Q.No.	Question	Marks
30	A student asked her teacher, I have an aquarium at home and we clean this aquarium every 15½ days. But I have never seen any pond, ~~which is a natural ecosystem, does not require any cleaning. Why!~~ getting cleaned regularly. Why?.	3
31.	After burning magnesium ribbon, white powder is formed. A student mixes this white powder with water and tested its nature with litmus paper. Write the observations by writing chemical reactions.	3
32	(a) The diagram shows a thick copper wire A and a thin copper wire B.  Both wires have the same length. State and explain the difference, if any, in the resistance of the wires.	3

Q.No.	Question	Marks
(b)	How do you ~~~~ draw a circuit diagram containing a cell, an ammeter, a resistor of 1 Ω in series with a combination of two resistors of 2 Ω each in parallel and a voltmeter?	
33. (a)	Name the phenomenon which could explain the formation of rainbow.	3
(b)	Why cannot we observe similar bands of colours when light passes through a glass slab and a Prism individually? rectangular Why is there dispersion in a Prism whereas not in a rectangular glass slab?	

Q.No.	Question	Marks
	Section – D	
	Q. No. 34 to 36 are long answer questions.	
34.		
(A)	(a) A yellow coloured powder 'X' is soluble in carbon disulfide. It burns with a blue flame causing forming a gas which is also suffocation and has smell. It turns moist blue litmus paper to red.	5
	(i) Identify 'X' as metal or Non-metal.	
	(ii) Give its chemical reaction of the observation given above.	
	(b) A metal acting as a reducing agent, reduces Fe_2O_3 and MnO_2. The reaction with Fe_2O_3 is used for welding broken railway tracks. Identify the metal and write the chemical reactions	
	(c) A student was given Mg, Zn, Fe and Cu metals. He put each of them in dil HCl and dil HNO_3 contained in different test tubes.	

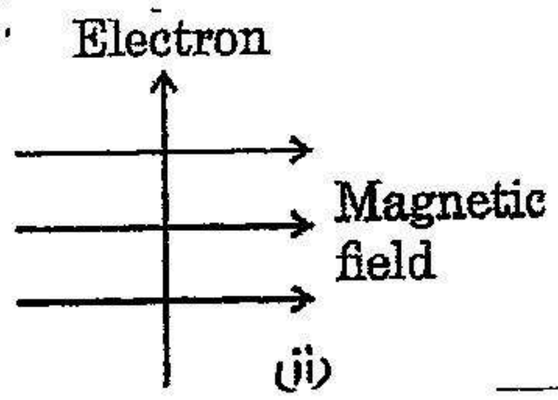
Q.No.	Question	Marks
	Identify which of them (~~the~~ metals)	
	(i) will give H_2 gas with dil HNO_3	
	(ii) will be displaced from its salt solution by all other metals.	
	OR	
(B)	~~or~~ In chemistry lab, while students ~~working~~ were	
	In chemistry lab, while working with different chemicals, teacher instructed students not to keep silver nitrate solution in a utensil made up of copper. Explain why she asked not to put silver nitrate solution in copper vessel?	
(a)	Give the steps involved in the extraction of metal with low reactivity from their respective sulphide ores.	
(b)	An ore on treating with dil HCl gives the smell of rotten egg. This ore is of the metal which forms amphoteric oxide. How can this ore be obtained from its concentrated ore? liberates * and also gives H_2 gas when treated with dil H_2SO_4.	

35
(A) (b)

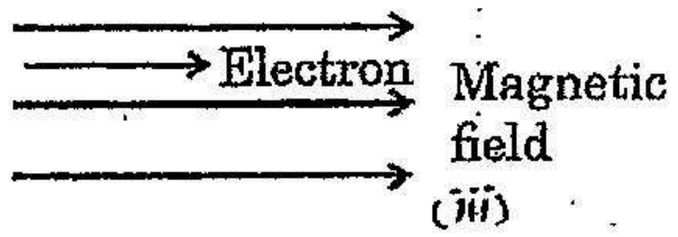


(b)

(c)

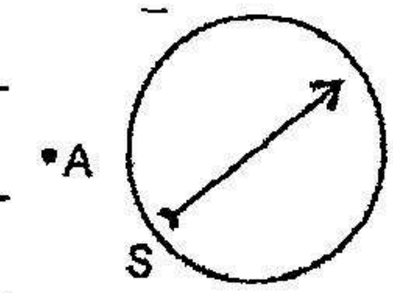


(ii)



(iii)

Q.No.	Question	Marks
	(c) State/state Draw the electron dot	
(iii)	structure of Sodium Oxide.	
	[Atomic number of Na = 11	
	" " " O = 8]	
35		
(A)	(a) State the rule used to find the force acting on a current carrying conducter placed in a magnetic field.	5
iagram	(b) Given below are three diagrams showing entry of an electron in a magnetic field. Identify the case in which the force will be (i) minimum and (ii) maximum respectively Give reason for your answer.	
	(c) Draw the pattern of magnetic field lines of. (i) a current carrying solenoid (ii) a bar magnet.	

Q.No.	Question	Marks
	OR	
(B)	(a) A magnetic compass needle is placed in the plane of paper near point A, as shown in the figure. In which plane should a ~~Straight conductor~~ current carrying straight conducter be placed so that it passes through A and there is no change in the deflection of the compass? Under what condition is the deflection maximum and why?	2
		
	(b) (i) Draw the pattern of magnetic field lines due to a magnetic field through and around a current carrying circular loop.	
	(ii) Name and state the rule to find out the direction of magnetic field inside and around the loop.	

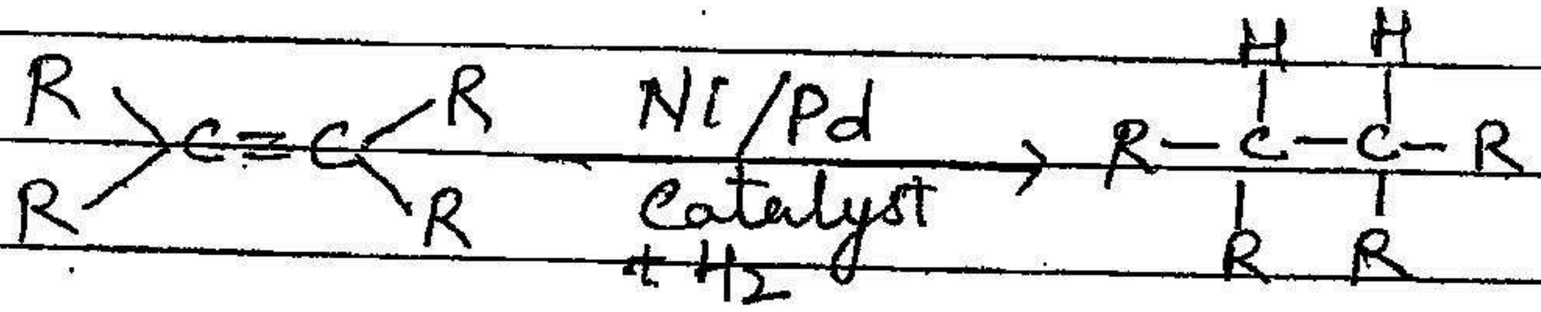
Q.No.	Question	Marks
	While	
36 A (a)	On putting ~~Suddenly~~ taking a sip of very hot tea, we ~~suddenly~~ roll our tongue immediately and ~~pull away with~~ mouthake. Which type of neurons got activated first and which one the next ... this process during	
	(b) Name the hormone responsible for bending of shoot in plants. When this plant is kept in a room where all the windows are closed but door is open. How does this plant shoot bend?	
	(c) Name the plant hormone which : (i) ~~which~~ inhibits growth of the plant and causes wilting of leaves (ii) promotes cell division	
	OR	
B (a)	Draw the diagram of Neuron. Label the parts of neuron of the stimulus (i) where information is acquired (ii) through which information travels as an electrical impulse	

Q.No.	Question	Marks
(b)	Why adrenaline helps in dealing emergency situation ? Give reason to explain your answer.	
(c)	Give reason why endocrine glands release their secretions into the blood ?	

SECTION - E

Q. 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.	Organic compounds are made up of Carbon, hydrogen, oxygen and few other elements. The number of organic compounds is bigger than inorganic compounds. Carbon is versatile because it can form single, double and triple bonds. It can also form chains, branched chains and rings when connected to other carbon atoms	4
(a)	What is electronic configuration of carbon and how many electrons are present in its valence shell ? [Atomic number of Carbon is 6]	

Q.No.	Question	Marks
(b)	Which are the properties of carbon which help it to form large number of carbon compounds?	
(c)	Look at the chemical reaction given here  (i) What is the name of this given reaction? Write one application of the reaction? (ii) Can we say the above given reaction as an addition reaction?	
	or	
(c)	A compound 'X' with molecular formula $C_3H_6O_2$ is formed when an acid 'Y' which is present in ant's sting and an alcohol 'Z' which is a constituent of cough syrup. Identify the compound 'Y' and 'Z'. Write the chemical reaction of the above reaction and name 'X', 'Y' and 'Z' of the respective reactants and products.	

Q.No.	Question	Marks
38.	Pre-conception and Pre-Natal Diagnostic techniques (PCPNDT) Act 1994 is an Act of the parliament of India enacted to stop female foeticides and control the declining sex ratio in India. The act banned prenatal sex determination. This process began when sonography technique gained widespread use in India for the want of a male child.	4
(a)	Why is there huge decline in child sex-ratio in India?	
(b)	Which are the factors that determine the size of the ~~poll~~ population (• two factors)	
(c) (i)	A pregnant woman visits a doctor for the sex-determination of the foetus. The docter refused to perform the test. Give reason for doctor's denial to tell abont the sex of foetus.	

Q.No.	Question	Marks
	(iii) Why is the increasing size of human population a matter of great concern?	
	or	
	(iv) If a woman is using copper-T, will it help in protecting her from sexually transmitted diseases? What is the use of copper-T?	
	(ii) What happens if the fallopian tubes are partially blocked and the ovulated eggs are prevented from reaching the uterus?	
39.	In a projector, slides or transparencies are used to see the things in a magnified form since projectors have a high resolution and image quality. Slides are inserted in the projector in such a way that viewers can see the enlarged erect images of the objects in the slides. A teacher used this.	4

Q. No.	Question	Marks
	projector to show the image of stomata to all the students. The teacher inserted the slides upside down in the projector tray.	
(a)	Based on the text, what kind of lens must the slide projector have?	1
(b)	With one reason state, what will be sign for $\frac{v}{u}$ in the given case? (v = image distance, u = object distance)	1
(c)	The lens of a slide projector has a focal length of 20 cm. The slide is placed upside down 30 cm from the lens. How far away should the screen be placed from the slide projector so that the slide will be in focus?	2
	OR	

Q.No.	Question	Marks
(c)	An object is placed at a distance of 10 cm from optical centre of a convex lens of focal length 15 cm. Draw a labelled ray diagram to show the formation of image in this case	