	Sample Paper-I (2025-26)	For Office
MACRO VISION ACADEMY BURHANPUR	**Class:** XI Biology	**Use Only**
	Time: 03:00 Hrs.	
	M.M: 80	

Personal Information

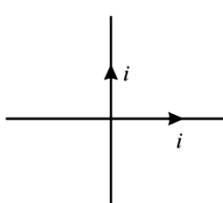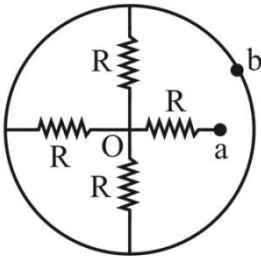Student's Name:-_____ Father's Name:-_____

City:-_____ Mobile No:-_____ Exam Date:-   /   /2026

Studying in Class:- _____ Appearing for class:-_____ Board:- _____

Present School Name:-_____ Category:-_____

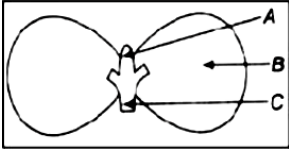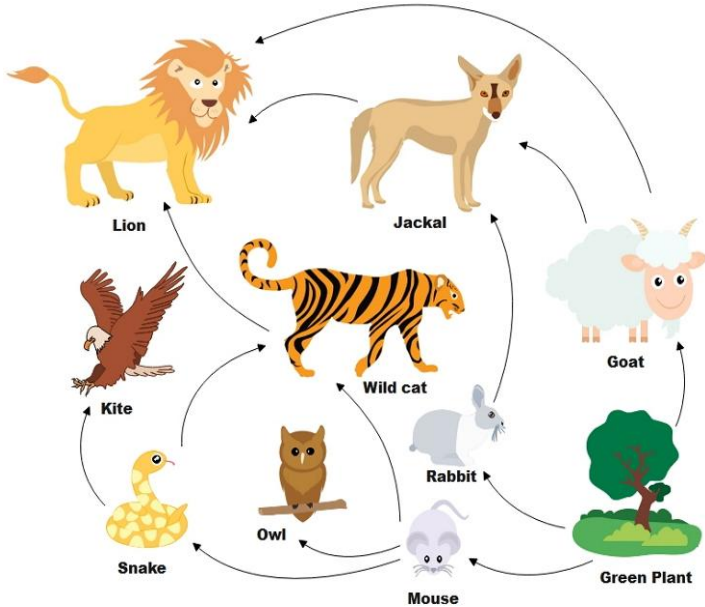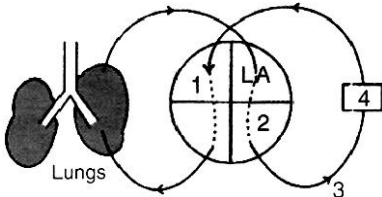| Physics (15)	Chemistry (15)	Biology (20)	Mathematics (10)	English (10)	MAT (10)	Total (80)	Remark

	Physics (15)	MM
	Choose the correct answer. (Q. 1 to 3)	
1.	Two thin lenses of focal lengths f_1 and f_2 are placed in contact with each other such that the combination behaves as a glass slab. Then how are f_1 and f_2 related to each other? (a) $f_1 = 1 / f_2$ (b) $f_2 = -f_1$ (c) $f_1 = f_2$ (d) $f_1 = \sqrt{f_2}$	1
2.	What power lens is needed to correct for farsightedness where the uncorrected near point is 50 cm? (a) + 2 diopters (b) – 3 diopters (c) + 4 diopters (d) – 2 diopters	1
3.	A plotting compass is placed near the south pole of a bar magnet. The pointer of plotting compass will: (a) point away from the south pole (b) point parallel to the south pole (c) point towards the south pole (d) point at right angles to the south pole	1
	Fill in blank. (Q. 4 to 9)	
4.	Equal currents i flow in two wires along x and y axis as shown. In which quadrant net magnetic field is in downward direction _____. 	1

5.	The equivalent resistance between A and B for the circuit shown in the figure is ___.	1
6.	_____ causes the blue colour of sky and the reddening of the Sun at sunrise and sunset.	1
7.	A camera lens focuses light from a 12.0 m tall building located 35.0 m away on film 50.0 mm behind the lens. How tall is the image of the building on the film _____.	1
8.	The magnification produced by a spherical mirror is +0.42. Identify the nature of mirror _____.	1
	Do as Directed (Q. 9 - 10)	
9.	Draw the ray diagram of image formation by concave lens when object is placed between F and 2F.	1
10.	A monochromatic light is obliquely incident on one of the refracting surface of prism. Draw the ray diagram of showing emergent ray of light from the prism and also mark angle of deviation in diagram.	1
	Question Based on Reason & Assertion. (Q. 11 to 12) (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.	
11.	**Assertion (A):** Red light travels faster in glass than green light. **Reason (R):** The refractive index of glass is less for red light than for green light.	1
12.	**Assertion (A):** Force experienced by moving charge will be maximum if direction of velocity of charge is perpendicular to applied magnetic field. **Reason (R):** Force on moving charge is independent of direction of applied magnetic field.	1
	Case Based (Q. 13 to 15): Two tungsten lamps B_1 and B_2 with resistances R_1 and R_2 respectively at full incandescence are connected first in parallel and then in series, in a lighting circuit of negligible internal resistance. It is given that: $R_1 > R_2$.	
13.	Which lamp will glow more brightly when they are connected in parallel?	1
14.	Which lamp will glow more brightly when they are connected in series?	1
15.	How many joules in 1 Kilowatt-hour?	1

	Chemistry (15)	
	Choose the correct answer. (Q. 16 to 18)	
16.	Identify the X, Y and Z based on the basis of given information. X is a non-metal which is an important constituent of one food which forms two oxides Y and Z. Y is toxic and it causes suffocation and sometimes death. Z is responsible for global warming. (a) $X = C, Y = CO, Z = CO_2$ (b) $X = S, Y = SO_2, Z = SO_3$ (c) $X = P, Y = P_2O_3, Z = P_2O_5$ (d) $X = O, Y = O_2, Z = O_3$	1
17.	Why do we store silver chloride in dark-coloured bottles- (a) To prevent precipitation of silver chloride. (b) To prevent decomposition of silver chloride. (c) To promote decomposition of silver chloride. (d) All of these.	1
18.	A sample of soil is mixed with water and allowed to settle. The clear supernatant solution turns the pH paper yellowish-orange. Which of the following would change the colour of this pH paper to greenish blue? (a) Lemon juice (b) Vinegar (c) Common salt (d) An antacid	1
	Case Study (Q.19 - 21): The melting point and boiling points of some ionic compound are given below-	

Compound	Melting Point (K)	Boiling Point (K)
NaCl	1074	1686
LiCl	887	1600
CaCl₂	1045	1900
CaO	2850	3120
MgCl₂	981	1685

	These compound are termed ionic because they are formed by the transfer of electrons from a metal to a non-metal. The electron transfer in such compound is controlled by the electronic configuration of the elements involved. Every element tends to attain a completely filled valence shell of its nearest noble gas or stable octet.	
19.	The electronic configuration of calcium in CaCl₂ is- (a) 2, 8, 8, 2 (b) 2, 8, 8, 1 (c) 2, 8, 8 (d) 2, 8, 7	1
20.	Which among the following is highly soluble in water? (a) CH_3COCH_3 (b) LiCl (c) C_2H_6 (d) CH_4	1
21.	A copper vessel gets tarnished due to formation of an oxide layer on its surface. On rubbing lemon on the vessel, the surface is cleaned, and the vessel begins to shine again. This is due to the fact that it reacts with the acid present in lemon to form a salt which is washed away with water. As a result, the layer of salt is removed from the surface of the vessel and the shining surface is exposed. Name the salt formed in the above reaction.	1

	Fill in the blank. (Q. 22 to 27)	
22.	The diagram shows the reaction between metal and dilute acid. What is the reason for different behaviour of Mg in test tube B _____.	**1**
23.	Decomposition of limestone is endothermic OR exothermic _____.	**1**
24.	What is the role of reagent written on arrow's in the given chemical reaction _____. $$CH_3COOH + CH_3CH_2OH \xrightarrow{conc.H_2SO_4} CH_3COOC_2H_5 + H_2O$$	**1**
25.	Define the type of reaction involved in following reaction _____. $$Zn^{+2} + 2e^- \longrightarrow Zn$$	**1**
26.	Write the formula of the given compounds. (i) Propyne _____. (ii) Chloropropane _____.	**1**
27.	Name of the salt used to remove permanent hardness of water is _____	**1**
	Question Based on Reason & Assertion. (Q. 28 to 30) (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.	
28.	**Assertion (A):** The chemical name of bleaching powder is Calcium oxychloride **Reason (R):** Bleaching powder is used as an oxidising agent in chemical industries.	**1**
29.	**Assertion (A):** A White coloured powder is used by doctors for supporting factured bones. It is called as plaster of paris. **Reason (R):** It is also called gypsum.	**1**
30.	**Assertion (A):** Na is less reactive than Mg. **Reason (R):** Sodium reacts more vigrously with oxygen than magnesium.	**1**
	Biology (20)	
	Choose the correct answer. (Q. 31 to 34)	
31.	Mary sprinkled 5 kg of common salt on the grass growing on her lawn. After a couple of days, she observed that the grass had wilted and died. This was due to which of the following conditions? (a) Endosmosis (b) Turgidity (c) Deplasmolysis (d) Plasmolysis	**1**

32.	A person is suffering from kidney failure. He is put on a dialysis machine by the doctors. The osmotic pressure of dialysis fluid should be: (a) equal to that of blood.　　　　(b) more than that of blood. (c) less than that of blood.　　　　(d) equal to zero.	1
33.	The four major steps in seeing an object are: i. interpretation by the brain. ii. focussing of image. iii. entry of light rays. iv. transmission of nerve impulses from the retina & brain. The correct sequence will be: (a) i, ii, iii, iv　　　(b) ii, iii, iv, i　　　(c) iii, ii, iv, i　　　(d) iv, i, ii, iii	1
34.	Surya's father was diagnosed with Diabetes mellitus. The doctor advised him to avoid certain foods. Which are the foods he should avoid eating? P – Sweets Q - Leafy vegetables R – Bananas S - Pulses (a) P and R　　　(b) Q and S　　　(c) R and S　　　(d) P and Q	1
	Case Study (Q. 35 to 37): Raghav placed a potted plant in a cardboard box with a small opening on one side, allowing light to enter. After a few days, he observed that the stem of the plant bent toward the opening, as shown in the diagram	
35.	Name the type of plant movement observed by Raghav.	1
36.	Which plant hormone is responsible for above described movement? Where is this hormone most concentrated?	1
37.	If the plant's roots were visible, what would be their expected direction of growth?	1
	Fill in the blank. (Q. 38 to 44)	
38.	The enzymes in the pancreatic juice help in the digestion of _____ and _____.	1
39.	Which one of the following genotypes is homozygous dominant and which one homozygous recessive in regards to tongue rolling: Rr, rr, RR Homozygous dominant _____ Homozygous recessive _____	1
40.	Blood pressure, salivation and vomiting are controlled by _____ part of brain	1
41.	The fundamental unit of kidney is called _____.	1
42.	What is the term for the accumulation of toxins in an organism as it consumes other organisms _____.	1
43.	Name the process of generating energy from glucose in the absence of oxygen _____.	1
44.	Name the term describes an allele that requires two copies to be expressed in the phenotype _____.	1

	Label the parts of diagram correctly (Q. 45 to 47)	**1**
45.	In the below figure the parts A and B are: (A) _____ (B) _____	**1**
46.	Observe the figure given below and answer the given question. (A) Source of energy _____. (B) Available energy to lion if it feed on jackal. Available energy of plant is 1000 joule 	**1**
47.	Which of the below mentioned number is the thickest artery and number of the chamber of the heart which has the thickest muscular wall. 	**1**
	Question Based on Reason & Assertion. (Q. 48 to 50) (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.	
48.	**Assertion (A):** Root pressure helps in the upward movement of water in plants. **Reason (R):** It creates a suction pull in the xylem.	**1**

49.	**Assertion (A):** Biodegradable substances result in the formation of compost and natural replenishment. **Reason (R):** It is due to breakdown of complex inorganic substances into simple organic substances.	1
50.	**Assertion (A):** Hemodialysis can save the life of patients with kidney failure. **Reason (R):** Waste products like urea, excess salt and glucose can be removed from the blood by hemodialysis.	1

Mathematics (10)	

Choose the correct answer. (Q. 51 to 53)

51.	If $x = a, y = b$ is the solution of the equations $x - y = 2$ and $x + y = 4,$ then the values of a & b are respectively (a) 3 and 5 (b) 5 and 3 (c) 3 and 1 (d) −1 and −3	1
52.	The sum of first 16 terms of the AP: 10, 6, 2, ... is (a) −320 (b) 320 (c) −352 (d) −400	1
53.	A point P is 10 cm away from the centre of a circle. The length of the tangent drawn from P to the circle is 8 cm. The radius of the circle is equal to (a) 4 cm (b) 5 cm (c) 6 cm (d) None of these	1

Fill in the Blank. (Q. 54 to 57)

54.	If $(x - a)$ is a factor of the polynomial $(x^3 - ax^2 + 2x + a - 1),$ then a =_____.	1
55.	At a point 15 metres away from the base of a 15 metres high house, the angle of elevation of the top is _____.	1
56.	Perimeter of the quadrant of a circle of radius r =_____.	1
57.	The ratio between the surface areas of two spheres is 4 : 9. The ratio between their volumes is _____.	1

Subjective Type Questions (Q. 58 to 60)

58.	The sides in (cm) of a right triangle are $x - 1, x$ and $x + 1$. Find the sides of the triangle. (x is positive integer)	1
59.	In what ratio does the point $P(2, -5)$ divide the line segment joining $A(-3, 5)$ and $B(4, -9)$?	1
60.	If $\sin(A + B) = \dfrac{\sqrt{3}}{2}$ and $\cos(A - B) = 1, 0° < A + B < 90°$ and $A \geq B,$ find A and B.	1

English (10)	

Read the passage carefully and answer the multiple choice questions that follow.

Title: The Ethics of Memory in a Digital Age

In today's digital world, the relationship between memory and identity is undergoing a profound shift. Memory, once a selective and fading process shaped by time and

emotion, is now increasingly externalized—recorded, stored, and retrievable indefinitely. Social media, surveillance technologies, and digital archives preserve actions, conversations, and images far beyond their original context. While this permanence can offer a sense of continuity, it also raises troubling ethical questions: Should everything we remember be remembered forever?

Digital memory creates a paradox. A mistake from youth, once naturally forgotten, can now follow someone indefinitely—accessible with a simple search. These stored records can harm reputations long after their relevance has faded. Moreover, algorithms and third parties increasingly shape what is remembered and forgotten, stripping individuals of control over their own narratives. Memory is no longer private—it is public, curated, and often monetized.

Yet, forgetting also serves a purpose. On a personal level, forgetting allows for healing and growth; people can move past previous failures and reinvent themselves. Socially, forgetting may support reconciliation, helping communities overcome painful histories. However, when forgetting is forced—by governments or tech platforms—it risks erasing important truths. "Right to be forgotten" laws, while protecting privacy, may also open doors to rewriting history.

Power plays a central role. Those in control—governments, corporations, tech giants—often decide what is preserved and what disappears. Marginalized voices may be excluded, distorted, or silenced, while dominant narratives are amplified. In this way, memory becomes a battleground—between remembering and forgetting, justice and denial, visibility and invisibility.

The core issue is not whether digital memory is inherently good or bad, but how we manage it. Ethical frameworks must be developed to guide what is kept, what is deleted, and under what conditions. The challenge lies in balancing truth with compassion, history with dignity, and permanence with the human need to evolve.

61.	**Assertion (A):** Digital memory always safeguards individual dignity.	1
	Reason (R): Digital archives allow for the retrieval and preservation of past actions and experiences.	
	Which of the following is correct?	
	(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 false, but R is true	
	(d) Both A and R are false	
62.	Which of the following statements can be reasonably inferred from the passage?	1
	(a) Forgetting should always be avoided, regardless of context.	
	(b) Digital memory has no significant impact on personal identity.	
	(c) The curation of memory by algorithms can shape public norms and perceptions.	
	(d) All digital information should be permanently deleted to protect privacy.	

63.	Complete the analogy based on the central themes of the passage: Digital memory is to personal identity as — : (a) Forgetting is to personal growth (b) Power is to silence (c) Reputation is to forgiveness (d) Memory is to emotion	1
64.	In the context of the passage, what is the most appropriate meaning of the word **"mandated"** (as used in the phrase *"mandated forgetting"*)? (a) Gently suggested (b) Strongly encouraged (c) Legally or authoritatively enforced (d) Randomly initiated	1
	Fill in the blanks. (Q. 65 to 68)	
65.	By the time the committee announced its decision, the candidates _____ in suspense for nearly a month, with no clear indication of the outcome. *(had waited / had been waiting / were waiting)*	1
66.	If the expedition team _____ the weather alerts more seriously, they might have avoided the avalanche. *(took / had taken / would take)*	1
67.	Not until the evidence was re-examined thoroughly _____ the investigators realize that they had been following a false lead all along. *(did / do / had)*	1
68.	"Write a single, cohesive **paragraph** of 80–100 words exploring the idea that **'Freedom without responsibility leads to chaos.'** In your paragraph, present a clear central idea, real-world examples, and demonstrate advanced sentence structure, and precise vocabulary.	3
	MAT (10)	
	Solve the question based on general intelligence. (Q. 69 to 78)	
69.	P is the brother of Q. Q is the sister of R. R is the daughter of S. How is P related to S? (a) Son (b) Father (c) Brother (d) Cousin	1
70.	A is the father of B. C is the mother of A. D is the brother of C. How is D related to B? (a) Uncle (b) Grandfather (c) Cousin (d) Brother of grand mother	1
71.	If HAND is coded as IBOE, then how will WORK be coded? (a) XPSL (b) XPSL (c) XQSL (d) XPSN	1
72.	If APPLE = 50 and MANGO = 50 (sum of letters' positions), then what will GRAPE equal? (a) 55 (b) 57 (c) 59 (d) 47	1
73.	A person walks 10 m South, then 5 m West, then 10 m North. How far is he from the starting point? (a) 5 m West (b) 5 m East (c) 10 m North-West (d) Back to start	1

74.	A boy starts facing East. He turns right, then left, then right again. Which direction is he facing now?	1
	(a) East (b) South (c) West (d) North	
75.	11, 22, 44, 88, ___	1
	(a) 132 (b) 144 (c) 166 (d) 176	
76.	3, 9, 27, 81, ___	1
	(a) 162 (b) 218 (c) 243 (d) 324	
77.	I fly without wings, I cry without eyes. Wherever I go, darkness flies. What am I?	1
	(a) Air (b) Cloud (c) Wind (d) Storm	
78.	In a code, **FLOWER** is written as **GMPXFS**. How is **GARDEN** written?	1
	(a) HBSEFO (b) HBSDOM (c) HBSDOO (d) HBSFEM	

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