

Monthly Progressive Test

Class: VIII (S)

Subject: PCMB



Test Booklet No.: MPT06 Test Date: 0 3 1 0 2 0 2 4

Time: 120 mins Full Marks: 200

Important Instructions:

- 1. The Test is of 120 mins duration and the Test Booklet contains 100 multiple choice questions of single correct option only. There are four sections with four subjects. You have to attempt all 100 questions (Candidates are advised to read all 100 questions). Questions 1 to 25 contain Physics, Questions 26 to 50 contain Chemistry, Questions 51 to 75 contain Mathematics, Questions 76 to 100 contain Biology.
- 2. Each question carries 2 marks. For each correct response, the candidate will get 2 marks. There is no negative mark for wrong response. The maximum mark is 200.
- 3. Use Blue / Black Ball point Pen only for writing particulars marking responses on Answer Sheet.
- 4. Rough work is to be done in the space provided for this purpose in the Test Booklet only.
- 5. On completion of the test, the candidate must handover the Answer Sheet to the invigilator before leaving the Room / Hall. The candidates are allowed to take away this Test Booklet with them.
- 6. The CODE for this Booklet is Off Line MPT06(S)03102024.
- 7. The candidates should ensure that the Answer Sheet is not folded. Do not make any stray marks on the Answer Sheet. Do not write your UID No. anywhere else except in the specified space. Use of white fluid for correction is NOT permissible on the Answer Sheet. **Do not scrible or write on or beyond discrete bars of OMR Sheet at both sides**.
- 8. Each candidate must show on-demand his/her Registration document to the Invigilator.
- 9. No candidate, without special permission of the Centre Superintendent or Invigilator, would leave his/her seat.
- 10. Use of Electronic Calculator/Cellphone is prohibited.
- 11. The candidates are governed by all Rules and Regulations of the examination with regard to their conduct in the Examination Hall. All cases of unfair means will be dealt with as per Rules and Regulations of this examination.
- 12. No part of the Test Booklet and Answer Sheet shall be detached under any circumstances.
- 13. There is no scope for altering response mark in Answer Sheet.

Space For Rough Works



Physics

1.	Water waves are							
	♠ Transverse waves	S	lacksquare	Longitudinal wav	es			
	© Electromagnetic	waves	(D)	Gravitational wav	es			
2.	The distance between crest and trough is							
	The amplitude		$^{f B}$	Twice the amplitu	ıde			
	© The time period		(D)	Twice the time pe	erioc	d		
3.	Amplitude is							
	A Distance between	n crest and trough						
	Distance between	n two neighboring cre	sts					
	© Maximum displa	cement about the zero	o-po	oint				
	None of these							
4.	Frequency is							
Reciprocal of the amplitude				Reciprocal of the time period				
	© Reciprocal of the	(D)	Reciprocal of the	spe	ed			
5.	Sound cannot travel	l through		C.P.				
	Solids	B Liquids	©	Gases	(D)	Vacuum		
6.	The speed of sound	is highest in	W I					
	Solids	B Liquids	©	Gases	(D)	None of these		
7.	When temperature	of a gas increases, the	spe	ed of sound throug	gh th	ne gas		
	A Increases	B Decreases	©	Remains same	(D)	None of these		
8.	. Which of the following cannot travel through a vacuum?							
	A Light waves	B Heat waves	©	X-rays	(D)	Sound waves		
9.	. A big explosion on the moon cannot be heard on the earth because							
	The explosion pro	oduces high frequency	y so	und waves which a	are i	naudible		
	Sound waves req	uire a material mediu	m fo	or propagation				
	© Sound waves are	absorbed in the atmo	sph	ere of moon				
	© Sound waves are absorbed in earth's atmosphere							

		[2]						
10.	O. An astronaut cannot hear his companion at the surface of the moon because							
	Produced frequencies are above the audio frequencies							
	There is no med							
© Temperature is too low during night and high during day								
	① There too many	craters on the surface	of the moon					
Asse	rtion-Reason type	Questions (8–9):						
Dire	ctions: Read the foll	owing questions and cl	noose any one of the fo	ollowing four responses.				
	A. If both Assertion and Reason are true and Reason is the correct explanation of the Assertion.							
	B. If both Assertion Assertion.	and Reason are true b	out Reason is not a co	rrect explanation of the				
	C. If Assertion is tru	ue but the Reason is fal	lse.					
	D. If Assertion is fal	se but Reason is true.						
11 . Assertion: The astronauts communicate with each other over radio set.								
	Reason: Radio wav	es cannot travel throug	gh vacuum.					
	A A	B B	© C	D				
12.	Assertion: Suppose sound.	e a stick is struck agains	st a frying pan in vacu	um, we cannot hear the				
	Reason: The frying	pan will not vibrate.						
	A A	B B	© C	© D				
Case	Based Questions (13-14):						
		ter and immerse a sque and made by the squeal	• •	of the bucket. Press the				
13.	This shows that sou	nd travels through						
	(A) water	B solid	© oxygen	none of these				
14.	Dolphins can comr	nunicate with one ano	ther because					
	Sound travels th	rough sea water						

We cannot say

® Sometimes sound can travel through sea water

© Sound cannot travel through sea water

15.	Which of the following statement is correct?						
	(A) Both sound and light waves in air are longitudinal waves						
	Both sound and light waves in air are transverse						
	© Sound waves in a	air are transverse while	e light longitudinal				
	© Sound waves in air are longitudinal while light transverse						
16.	The total number of	f types of inertia is					
	A 1	B 2	© 3	© 4			
1 7.	If weight of a body is	s 19.6 N, then the mass	s of the body (in kg) is				
	A 2	B 1.5	© 1	D 3			
18.	A force of 5 N actin (in Kg m/s)	ng on a body for 3 s, th	nen value of change i	n linear momentum is			
	(A) 10	B 12	© 15	D 16			
19.	On slippery floor, wa	alking is					
	(A) easy	\rightarrow	B difficult				
	© sometimes diffic	ult	None of the above	e is correct			
20.	If we increase norm	al contact force, then l	imiting static friction				
	A Increases	B Decreases	© May increase	None of these			
21.	Frequency \times Time p	period =	ADIA				
	A 2	B 3	© 4	1			
22.	Wave length =						
	♠ Velocity/frequen	ıcy	B Frequency/velocity	ity			
	© Velocity × Time p	period	Description Both Description and Description and Description	correct			
23.	Frequency of sound	l is same as the frequer	ncy of vibration source	e.			
	True	B False	© May be true	We cannot say			
24.	Shrill sound has						
	A Low frequency	B High frequency	© High amplitude	D Low amplitude			
25.	Speed of sound in ga	as is directly proportio	nal to the square root	of temperature of gas			
	A False	May be false	© True	Data insufficient			

Chemistry

- **26**. The lightning of electric bulb in a circuit shows:
 - A Chemical effect of electric current
- B Heating effect of electric current
- © Magnetic effect of electric current
- None of the above
- **27.** Water can be dissociated into its components by the process of:
 - A Photosynthesis
- B Electroplating
- © Chemolysis
- © Electrolysis
- **28**. Which of the following liquids are good conductors of electricity:
 - (A) Acids
- B Bases
- © Salts
- All of the above

Assertion Reason Type Question (29):

Read the two statements carefully and select the correct option given below.

- A: Assertion and Reason both are correct and Reason is the correct explanation of Assertion
- **B:** Assertion and Reason both are correct and Reason is not the correct explanation of Assertion
- C: Assertion is correct but Reason is wrong
- D: Assertion is wrong but Reason is correct
- **29. Assertion (A):** One of the most reliable method to prevent metal objects from rust is electroplating.

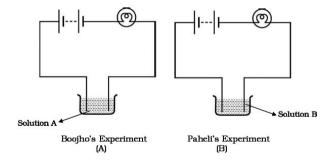
Reason (R): Electroplating is the process of depositing a layer of metal onto another with the help of electricity.

A

B B

© C

- D
- **30.** Boojho and Paheli performed experiments taking similar bulbs and cells but two different solutions A and B as shown in figure.



They found that the bulb in the setup A glows more brightly as compared to that of the setup B. You would conclude that

A higher current is flowing through the circuit in setup A

- (B) higher current is flowing through the circuit in setup B
- © equal current is flowing through both the circuits
- (1) the current flowing through the circuit in the two setups cannot be compared in this manner

Case Based Questions (31-32):

Electrolysis is defined as a process of decomposing ionic compounds into their elements by passing a direct electric current through the compound in a fluid form. The cations are reduced at cathode and anions are oxidised at the anode. The main components that are required for conducting electrolysis are an electrolyte, electrodes, and some form of external power source is also needed. Electrolysis is usually done in a vessel named 'electrolytic cell' containing two electrodes (cathode and anode) connected to a direct current source and an electrolyte which is an ionic compound undergoing decomposition. In the process of electrolysis, there is an interchange of ions and atoms due to the addition or removal of electrons from the external circuit. Basically, on passing current, cations move to the cathode, take electrons from the cathode (given by the supply source-battery), and is discharged into the neutral atom. The neutral atom, if solid, is deposited on the cathode and if gas, move upwards. This is a reduction process and the cation is, reduced at the cathode. At the same time anions, give up their extra electrons to the anode and is oxidised to neutral atoms at the anode. Electrons released by the anions travel across the electrical circuit and reach the cathode completing the circuit. Electrolysis involves a simultaneous oxidation reaction at anode and a reduction reaction at the cathode

ano	de una a readchon reachon at th	ie catiloae.					
31.	Which of the following process is based on the principles of electrolysis?						
	A Rusting	B	Colour change of electrolyte				
	© Electroplating		None of the above				
32.	-	are the metal	olution that allows an electric current to rods which are dipped in electrolyte and				
	A Electrode, electrolyte	B	Anode, cathode				
	© Solution, electric plate	(D)	Electrolyte, electrode				
33.	If a compass is placed near to the	ne current con	ducting wire, then the true observation is				
	♠ The needle starts to deflect	B	The needle breaks				
	© The compass becomes hot	(D)	No change is seen				
34.	When a pinch of common salt i	s added to dist	illed water then?				
	♠ Electrical conductivity increase	ases					
	® Electrical conductivity decre	eases					
	© Electrical conductivity at first	st increases the	n decreases				
	© Electrical conductivity at first decreases then increases						

Assertion Reason Type Question (35–38):

Read the two statements carefully and select the correct option given below.

A: Assertion and Reason both are correct and Reason is the correct explanation of Assertion

B: Assertion and Reason both are correct and Reason is not the correct explanation of Assertion

C: Assertion is correct but Reason is wrong

D: Assertion is wrong but Reason is correct

35. Assertion: Bulbs are more preferred than LED at the time of making traffic signals **Reason:** LED have longer lifetime than bulbs

 \triangle A

(B) B

 \bigcirc C

(D) D

36. Assertion: On small iron made bodies, chromium coating is given

Reason: Chromium prevents the iron made body from corrosion

 \triangle A

B B

(C) (C)

(D) D)

37. Assertion: When electrodes are placed inside acidified water and electricity is passed through it then two colourless gases are obtained

Reason: Acidified water is electrolysed when current is passed through it

 \triangle A

B B

© C

(D) D

38. Assertion : Electrical appliances are not touched in wet hands

Reason: Touching with wet hands, the colours of these appliances get affected

 \triangle

© C

(D) D

Case Based Questions (39-40):

The process by which a metal is coated over another metal by using electric current is known as electroplating. The substance which will be electroplated is taken as the negative terminal and the layer that will be given is taken as the positive terminal. The solution of the salt containing the coating metal ion is used as the electrolyte. In this process, coating of a costlier metal is given over the cheaper metal.

39. During electroplating of copper, aqueous solution of which salt is used?

A silver nitrate

B zinc sulphate

© copper sulphate © sodium chloride

40. During electroplating of copper, the role of the aqueous solution of the salt is

(A) insulator

B electron supplier **©** heat generator

• electrolyte

- **41.** A magnetic compass is placed very close to a wire which is conducting electric current. Suddenly the power supply to the wire is just stopped. Then the correct observation will be
 - (A) the compass will become too hot.
 - (B) the glass placed in the compass will crack
 - © the colour of the needle will change
 - (D) deflection of needle will stop immediately
- **42.** Match the item of column I with the items of column II

	Column I	Column II		
(a) LPG		(i)	Non-combustible	
(b)	Iron nails	(ii)	Deforestation	
(c)	Candle	(iii)	Cooking gas	
(d)	Wood	(iv)	Flame	

(A) a-(iii), b-(i), c-(iv), d-(ii)

B a-(iii), b-(ii), c-(i), d-(iv)

© a-(ii), b-(iii), c-(i), d-(iv)

① a-(ii), b-(iii), c-(iv), d-(i)

- **43.** Filament is present in
 - (A) only LED

Only bulb

© both LED and bulb

- none of LED and bulb
- **44.** Fuel must be heated to it's _____ before it starts burning
 - **(A)** conversion temperature

B ignition temperature

© inversion temperature

- © combustion temperature
- **45.** Which are produced at the outermost zone of a candle flame?
 - Carbon and water vapour
- B Carbon dioxide and carbon
- © Carbon dioxide and water vapour
- © Carbon monoxide and water vapour
- **46.** The device which can be used to detect very small current flowing in an electric circuit is:
 - A LEAD
- MCB
- © LED

- © LDE
- **47.** During the electroplating of an article by the process of electrolysis, the article to be electroplated is kept at
 - Any electrode

B At anode

© At the external circuit

At cathode

- 48. Which of the following metals is used in electroplating to make objects appear shining
 - A Iron

B Copper

© Chromium

Aluminium

Assertion Reason Type Question (49):

Read the two statements carefully and select the correct option given below.

- A: Assertion and Reason both are correct and Reason is the correct explanation of Assertion
- **B:** Assertion and Reason both are correct and Reason is not the correct explanation of Assertion
- C: Assertion is correct but Reason is wrong
- **D:** Assertion is wrong but Reason is correct
- **49. Assertion:** During electroplating by the process of electrolysis the article (metal) by which we want to electroplate is kept at anode

Reason: Metal looses the electrons and comes in the solution as metal ion which deposited at cathode (the article to be electroplated) by gaining the electron (s).

A A

B B

© C

- **(D)** D
- **50.** The process of depositing a thin coating (layer) of any superior metal over an object of a cheaper metal with the help of electricity is called:
 - Electrorefining

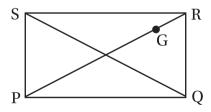
B Electrometalling

© Electroplating

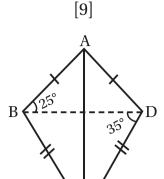
None of these

Mathematics

51. In the figure PQRS is a rectangle and G is a centroid of the Δ SRQ. If RG = 4 cm, then the length of SQ is



- **A** 8 cm
- **B** 12 cm
- © 16 cm
- **©** 6 cm
- **52.** In the figure ABCD is a kite. AB = AD and BC = DC, \angle ABD = 25°; \angle CDB = 35°. Find x if \angle A \angle C = 2x.



A 40°

(B) 30°

© 20°

- ① 10°
- **53.** In a rhombus if diagonals are equal. Then the rhombus necessarily will be
 - **(A)** a rectangle but not square
- **B** a parallelogram but not a square

© a square

- kite
- **54.** ABCD is rhombus and $\angle BAD = 60^{\circ}$. Then $\angle CAB = ?$
 - A 30°

(B) 45°

© 60°

© 90°

- **55.** If x = 12, then the value of $(4x^2 4x + 1)$ is
 - **A** 529

B 576

© 625

D -529

- **56.** $242x^2 162b^2 = ?$
 - \bigcirc 2(11x + 9b) (11x + 9b)

B 2(11x-9b)(11x-9b)

© 2(11x+9b)(11x-9b)

- \bigcirc (9x 11b)(9x + 11b)
- **57.** Of the following the linear equation in one variable *x*, is

$$\bigcirc \frac{3}{x} = \frac{x}{3} + 2$$

(a)
$$\frac{3}{x} = \frac{x}{3} + 2$$
 (b) $\frac{2}{x} + \frac{3}{x-1} = 1$ (c) $\frac{x}{5} + \frac{x}{2} = 3$ (d) $x^2 + x + 1 = 0$

Assertion Reason based Questions (58-59):

Directions: In the following questions, a statement of assertion (A) is followed by a statement of Reason (R). Choose the correct answer out of the following choices.

- (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.
- **58**. **Assertion (A):** If ABC is a right-angled triangle right angle at B and O is the mid-point of the side opposite to the right angle. Then OA = OB = OC.

Reason (R): Diagonals of rectangle are equal and bisect each other perpendicularly.

A a

B b

© c

© d

59. Assertion (A): RENT is a rectangle where, OT = 3x + 1

$$OR = 2x + 4$$

Then x = 3

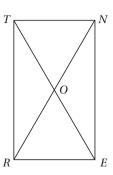
Reason (R): Diagonals of a rectangle are equal and bisect each other.

(A) a

B b

© c

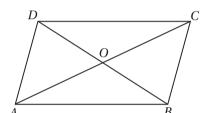
© d



Case Study Based Questions (60-62):

A park is designed in the shape of a parallelogram, with sides AB and CD being parallel and equal, as well as sides BC and AD being parallel and equal. Diagonals AC and BD intersect at point O. On the basis of this information answer the following questions.

60. If AB = 10 m and BC = 8 m, then which of the following is true?



- $\triangle BD = 18 \text{ m}$
- **(B)** BD > 18 m
- \bigcirc BD < 18 m
- \bigcirc 2 m < BD < 18 m
- **61.** If AC = 14 m, then OA = ?
 - **(A)** 7 m

- **B** 10 m
- © 6 m

② 4 m

- **62.** If $\angle DAB = 70^{\circ}$ then $\angle ABC = ?$
 - **♠** 70°

B 110°

© 80°

100°

63. As a result, finally his salary is decreased by t%. As a result, finally his salary is decreased by $\frac{t^2}{100}\%$. Comment on the above statement.

A true

B false

© cannot be determined

none of these

64. The price value of the share of a company is increased at the rate of 20% in a year and decreased at the rate of 10% in the next year. If the present value of the share is ₹ 2000, then what will be its value after 2 years?

- **A** ₹2060
- **B** ₹2160
- © ₹2260
- **②** ₹2360

65. A dishonest grocer sells rice at 20% profit and uses weights which are 20% less than the market weight. Find his total gain%.

- **A** 50%
- **B** 25%

© 40%

© 80%

- **66.** The value of $x^{a-b} \times x^{b-c} \times x^{c-a}$ is
 - A) 3

B 1

© 2

(D) 0

- **67.** The greatest three digit perfect square is
 - **(A)** 999

B 961

© 962

© 971

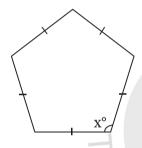
- **68.** Which of the following is a pythagorean triplet?
 - **A** 2,3,4
- **B** 6,8,10
- © 5,7,9
- None of these
- **69.** If $a^2 + \sqrt{2}a + 1 = 0$, then find the value of $\frac{a^4 + a^2 + 1}{a^2}$

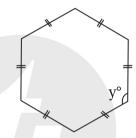
B $-\sqrt{2}$

© 5

① 1

70.





what is the ratio of x : y?

- **A** 9:10
- **B** 7:9

© 4:3

- **③** 3:4
- **71.** Let P_1 be a regular r-gon and P_2 be a regular s-gon ($r \ge s \ge 3$) such that interior angle of P_1 is $\frac{59}{58}$ as large as each interior angle of P_2 . What is the largest possible value of s?
 - ② 220

B 117

© 118

- © can't say
- **72.** A regular polygon of 6 sides is inscribed in a circle of radius 1 cm. If the area of the polygon is $\frac{\sqrt{3}}{2}n$ cm², then n equals to
 - A) 3

B 6

© 9

- **(D)** 15
- **73.** 12 dozen of eggs are bought by Ravi at ₹72 per dozen. If he sells it at ₹8 per piece, then profit earned on 12 dozen of eggs =
 - **A** ₹260
- **B** ₹272
- © ₹280
- **74.** The difference between simple interest and compound interest compounded annually on a certain sum of money for 2 years at 4% per annum is ₹1. What is the value of sum (in ₹).
 - A 525

B 425

© 615

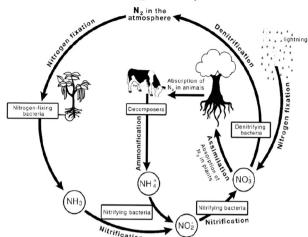
none of these

75.	Area of a parallelog value of height h .	gram i	is 192 cm ² .	If base is b	cm and 4 ≤	$\leq b \leq 12$, then find the maxim	um
	(A) 32 cm	B	42 cm	©	36 cm	② 48 cm	
				Biology			
				Diology			
76.	What is the main s	source	e of food fo	r female m	osquitoes?	?	
	A Plant nectar			B	Blood		
	© Sugary substan	ices		(D)	Water dro	oplets	
77.	Which microorgan	nism c	causes dise	eases like co	ommon co	old, flu and COVID-19?	
	A Bacteria			B	Virus		
	© Fungi			D	Protozoa	ı	
78.	Where does biolog	gical n	itrogen fix	ation prim	arily occur	r in plants?	
	A Leaves			B	Stems		
	© Roots			D	Flowers		
79.	Which is a conseq	uence	e of defores	station?			
	Soil erosion	T	四	B	Loss of bi	iodiversity	
	© Disruption of w	vater c	cycles	(D)	All of the	above	
80.	What is the primar	ry mo	de of trans	mission for	diseases	carried by houseflies?	
	A Direct contact			B	Air borne	e transmission	
	© Contaminated	food a	and water	(D)	Through	sexual contact	
81.	Overuse or misuse	e of an	ntibiotics ca	an lead to			
	Increased effectiveness against bacteria						
	Antibiotic resis	tance					
	© Reduced side e	effects					
	Faster recovery	from	infections				
82.	Which human acti	ivity c	ontributes	significant	ly to the cle	earing of forests for agricultu	re?
	A Recycling			lacksquare	Sustainal	ble farming	
	© Cattle ranching	g		(D)	Wildlife p	protection	
Case	Based Questions	(83-8	7):				

Study the diagram of the Nitrogen Cycle given below and answer the following questions:

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Nitrogen Cycle



- A Lightning
- Rainfall
- © Low temperature © Cloud formation

- **84.** Denitrification is caused by
 - Nitrobacter
- B Nitrosomonas
- © Pseudomonas
- (D) All

- **85.** Nitrogen is a constituent of which of the following?
 - A Proteins
- Chlorophyll
- © Nucleic acids
- All
- **86.** Due to nitrogen cycle, percentage of nitrogen in the atmosphere _____
 - A Increases

B Decreases

© Remains constant

- O Varies from place to place
- 87. Which of these soil organisms can fix atmospheric nitrogen?
 - A Blue green algae B Earthworm
- © Insects
- Prog

Assertion-Reason type Questions (88-90):

Directions: Read the following questions and choose any one of the following four responses.

- 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 Reason is false.
- D. Assertion is false but Reason is true.
- **88. Assertion:** Trees act as carbon sinks.

Reason: Trees absorb CO₂ from the atmosphere.

A A

B B

© C

D

89.	Assertion: Climate change can impact ecosystems.						
Reason: Climate is an abiotic component of the ecosystem.							
	A A	B B	©	C	(D)	D	
90.	Assertion: The euca	alyptus is not native to	Ind	ia.			
	Reason: The Gangetic dolphin is an exotic species.						
	A A	B B	©	C	(D	
91.	What do black buck	, elephant, python and	d go	lden cat together r	epr	esent in a forest?	
	A Flora	B Fauna	©	Ecosystem	(D)	Species	
92.	The Red Data Book	keeps a record of all th	ıe				
	(i) endemic species		(ii) extinct species				
	(iii) endangered pla	ants	(iv	e) endangered anin	nals	}	
	(i) and (ii)	B (ii) and (iii)	©	(iii) and (iv)	(D)	(i) and (iv)	
93.	The disease/diseases that can be prevented by vaccination are						
	A Measles	Mumps	©	Rubella	(D)	All	
94.	Name the sugar pre	sent in milk.					
	A Glucose	B Fructose	©	Lactose	(D)	Sucrose	
95.	A silo is used for	9					
	A Storing fruits and	d vegetables	B	Storing fish			
	© Storing dairy pro	oducts ///DIP	0	Storing grains			
96.	The group 'helmint	hes' include					
	A Insects	B Worms	©	Protozoans	(D)	Bacteria	
97.	Tsetse fly is the vect	or of which disease?					
	Typhoid	B Cholera	©	Tetanus	(D)	Sleeping sickness	
98.	Serengeti National	Park is located in	_				
	A India	B Brazil	©	Tanzania	(D)	Canada	
99.	All the populations is called	of different species co-	exis	sting and interactin	ıgw	ithin a specific area	
	A Biome	B Community	©	Biodiversity	(D)	Biosphere	
100.	Reforestation aims	s to					
	A Restore lost habitats		lacksquare	Improve biodiver	sity		
	© Bring back ecosystem pattern		(D)	All of the above			

Space For Rough Works

