



Monthly Progressive Test

Class: VIII(G)

Subject: PCMB



Test Booklet No.: MPT07

Test Date:

2	2	1	1	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 .
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 scibble 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

1. Frequency is
 - (A) reciprocal of the amplitude
 - (B) reciprocal of the time period
 - (C) reciprocal of the wavelength
 - (D) reciprocal of the speed
2. The distance between two neighbouring rarefactions is the
 - (A) amplitude
 - (B) time period
 - (C) frequency
 - (D) wavelength
3. When temperature of a gas increases the speed of sound through the gas
 - (A) increases
 - (B) decreases
 - (C) remains same
 - (D) none of these
4. If the optical density of a medium is more
 - (A) the speed of light in that medium will be less
 - (B) the speed of light in that medium will be more
 - (C) the speed of light is 3×10^8 m/s
 - (D) none of these
5. The lens in human eye is a
 - (A) concave lens
 - (B) spherical lens
 - (C) convex lens
 - (D) none of these
6. An eye-defect which affects the far-point is
 - (A) Myopia
 - (B) Hypermetropia
 - (C) Cataract
 - (D) Conjunctivitis
7. The frequency of a light ray
 - (A) is fixed by the light source
 - (B) changes while travelling through a medium
 - (C) is zero
 - (D) none of these

■ Assertion Reason based Questions:

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

- 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.

8. **Assertion:** We can hear the ringing of doorbell or mobile phone.

Reason: Sound can travel through gases (i.e., air)

- (A) A (B) B (C) C (D) D

9. **Assertion:** The sound produced by a simple pendulum cannot be heard.

Reason: The frequency of a simple pendulum is very low.

- (A) A (B) B (C) C (D) D

10. The reason for delay in hearing of sound in lightning is that

- (A) the speed of sound is higher than the speed of light.
 (B) the speed of sound is much lower than the speed of light
 (C) the speed of sound is equal to the speed of light
 (D) none of these.

11. In wet air, speed of sound is

- (A) less than through dry air (B) greater than through dry air
 (C) same as through dry air (D) none of these

■ **Assertion-Reason type Questions**

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

- A. If both Assertion and Reason are true and Reason is the correct explanation of the Assertion.
 B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.
 C. Assertion is true but the Reason is false.
 D. Assertion is False and Reason is true.

12. **Assertion:** If there is no air between the vibrating object and our ear then no sound is heard.

Reason: A medium is must for the propagation of sound.

- (A) A (B) B (C) C (D) D

13. **Assertion:** Sound travels through a solid faster than through a liquid.

Reason: The closeness of the particles of solid are more than in the liquid.

- (A) A (B) B (C) C (D) D

14. **Assertion:** The astronauts communicate with each other over radio set.

Reason: Radio waves cannot travel through vacuum.

- (A) A (B) B (C) C (D) D

15. **Assertion:** Suppose a stick is struck against a frying pan in vacuum, we cannot hear the sound.

Reason: The frying pan will not vibrate in vacuum

- (A) A (B) B (C) C (D) D

16. If frequency of a sound wave is 1 Hz and wavelength is 1 m, then its speed is

- (A) 0.1 m/s (B) 1 m/s (C) 10 m/s (D) 100 m/s

17. Humans produce sounds through

- (A) lips (B) tongue (C) larynx (D) throat

Assertion-Reason type Questions :

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

- A. If both Assertion and Reason are true and Reason is the correct explanation of the Assertion.
 B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.
 C. If Assertion is true but the Reason is false.
 D. If Assertion is false but Reason is true.

18. **Assertion:** On top of a mountain air pressure is low

Reason: The column of air above the top of the mountain is shorter

- (A) A (B) B (C) C (D) D

19. Speed of a wave is given by

- (A) product of amplitude and time period (B) product of frequency and wavelength
 (C) product of frequency and time period (D) product of amplitude and wavelength

20. **Assertion:** The speed of sound in steel is 5130 ms^{-1} and the speed of sound in water is 1530 ms^{-1} .

Reason: Sound travels faster in solid than liquid.

- (A) A (B) B (C) C (D) D

Case Study Based Question (21-25):

21. A light source emits a monochromatic of wavelength 600 nm. Traveling through vacuum it is incident on a plane mirror at an angle of 30° with mirror surface.

The frequency of reflected light is

- (A) 5×10^{14} Hz (B) 0.5×10^9 Hz (C) 0.5×10^{14} Hz (D) 5×10^{11} Hz

22. The colour of the reflected light is

- (A) violet (B) indigo (C) yellow (D) green

23. The angle of reflection will be

- (A) 30° (B) 60° (C) 120° (D) 90°

24. The speed of reflected light will be

- (A) $2.25 \times 10^8 \text{ ms}^{-1}$ (B) $3 \times 10^8 \text{ ms}^{-1}$
 (C) $3.25 \times 10^8 \text{ ms}^{-1}$ (D) $2 \times 10^8 \text{ ms}^{-1}$

25. The angle of deviation for the reflected light is

- (A) 30° (B) 60° (C) 120° (D) 90°

Chemistry

26. Which is a metalloid ?

- (A) iron (B) mercury (C) arsenic (D) krypton

27. In case of rusting, the metal gets coated with its

- (A) oxide (B) bromide (C) hydride (D) nitride

28. Nichrome is an alloy of

- (A) copper & zinc (B) copper & tin
 (C) nickel & chromium (D) iron & chromium

29. Liquid non-metal is

- (A) nitrogen (B) mercury (C) bromine (D) iodine

30. Which gas is present at the highest percentage in the air?

- (A) oxygen (B) nitrogen (C) hydrogen (D) chlorine

31. Which gas is used for gas-balloons ?

- (A) nitrogen (B) helium (C) argon (D) oxygen

32. Which of the following metals is used in electroplating to make objects appear shining?

- (A) iron (B) copper (C) chromium (D) lead

33. Good conductors of electricity are the substance through which?
- (A) electric current passes very difficultly
 (B) electric current passes very easily
 (C) very easily at low temperature but difficultly at high temperature
 (D) very difficultly at low temperature but easily at high temperature
34. Which of the following is impact of heating effect of current?
- (A) water turns into ice
 (B) copper wire conducts electricity
 (C) a bulb glows
 (D) table salt becomes water soluble
35. If a compass is placed near to the current conducting wire, then the true observation is
- (A) The needle starts to deflect
 (B) The needle breaks
 (C) The compass becomes hot
 (D) No change is seen
36. Electric current can generate
- (A) Magnetic effect
 (B) chemical effect
 (C) heating effect
 (D) all are correct options

Assertion Reason Type Question (37–38):

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

37. **Assertion:** Only solid materials conduct electricity

Reason: There are non-conducting solid materials also

- (A) A (B) B (C) C (D) D

38. **Assertion:** LED is used instead of bulb to form a circuit

Reason: LED has two terminals having different lengths

- (A) A (B) B (C) C (D) D

Case Study Based Question (39–40):

Good conductors are those which can spontaneously conduct electricity. Conductors can be solid, liquid and gaseous. On the other hand non-conducting materials cannot conduct

electricity and they are termed as insulators. For electricity conduction the first criteria is there must be a circuit. Electrical energy can be converted into mechanical energy, heat energy, chemical energy, etc.

39. Circuit is used

- Ⓐ to check whether heat is generated or not
- Ⓑ to check whether current is passing or not
- Ⓒ to check whether sound is generated or not
- Ⓓ to check whether colour is produced or not

40. An example of an insulator is

- Ⓐ Dilute sulphuric acid
- Ⓑ Rubber
- Ⓒ Copper
- Ⓓ Steel

41. Which most commonly used liquid is decomposed by the process of electrolysis?

- Ⓐ Water
- Ⓑ Petrol
- Ⓒ Diesel
- Ⓓ Milk

42. Which of the following process is based on the principles of electrolysis?

- Ⓐ Rusting
- Ⓑ Colour change of electrolyte
- Ⓒ Electroplating
- Ⓓ None of the above

43. Which solution is the poorest conductor of electricity?

- Ⓐ Dilute sugar solution
- Ⓑ Dilute sulphuric acid solution
- Ⓒ Dilute sodium hydroxide solution
- Ⓓ Dilute calcium chloride solution

44. Acid rain can be caused by burning of

- Ⓐ Petrol
- Ⓑ CNG
- Ⓒ Diesel
- Ⓓ Coal

45. If a person's cloth catch fire, the best way to extinguish the fire is to

- Ⓐ throw water on clothes
- Ⓑ use fire extinguisher
- Ⓒ cover the person with a woollen blanket
- Ⓓ cover the person with polythene sheet

46. Which of the following is a non-electrolyte?

- Ⓐ carbonic acid solution
- Ⓑ ammonium hydroxide solution
- Ⓒ ethyl alcohol
- Ⓓ sodium chloride solution

47. Which of the following is the metallic liquid?

- Ⓐ lead
- Ⓑ mercury
- Ⓒ bromine
- Ⓓ magnesium

48. Brass is the alloy of:

- (A) iron and nickel (B) copper and gold (C) copper and zinc (D) copper and tin

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:** Metal has the property ductility, sonority

Reason: Iodine is a metal

- (A) A (B) B (C) C (D) D

Case Study Based Question (50):

Take about two teaspoonfuls of distilled water in a clean and dry plastic or rubber cap of a bottle. We can obtain distilled water from medical store or in our school science lab. Now, use the tester to check whether distilled water conducts electricity or not. Again dissolved a pinch of common salt in a distilled water and test the conductivity. Minerals salts which present naturally in water are beneficial for our health. However, these salts make water, a good conductor. So, we must never handle the electrical appliances with wet hands or while standing on the wet floor.

50. A tester is used to check the conduction of electricity through two liquids, labelled 'X' and 'Y'. It is formed that the bulb of tester glows brightly for liquid 'X', while it glows very dimly for liquid 'Y'. You would conclude that:

- (A) Liquid 'X' is better conductor than liquid 'Y'
 (B) Liquid 'Y' is a better conductor than liquid 'X'
 (C) Both liquids are equally conducting
 (D) Conducting properties of liquid cannot be compared in this manner.

Mathematics

51. A train 150 metre long is running at 90 km/h. How long (in seconds) will it take to clear a platform that is 300 m long?

- (A) 6 (B) 18 (C) 12 (D) 50

52. The weight of 12 sheets of a thick paper is 40 gram. How many sheets would weigh 1 kg?
 (A) 300 (B) 360 (C) 480 (D) None of these
53. A can do a piece of work in 10 days and B can do it in 20 days. They finished the work with the help of C in 5 days. How long C will take to finish the work alone?
 (A) 10 days (B) 15 days (C) 20 days (D) 5 days
54. A pump can fill a tank in 2 hours. Due to a leak in the tank it takes $2\frac{1}{3}$ hours to fill it. The leak can empty the full tank in
 (A) 12 hours (B) 10 hours (C) 14 hours (D) 8 hours
55. The parallel sides of a trapezium are 6 ft and 10 ft and its height is 1 ft 6 inch. What is its area?
 (A) 16 sq. ft (B) 14 sq. ft (C) 12 sq. ft (D) 18 sq. ft
56. Prisms and Pyramids are
 (A) polygons (B) cubes (C) polyhedrons (D) spherical shapes
57. If the numerical value of total surface area and volume of a cube is same, then the possible side-length of the cube is
 (A) 2 units (B) 4 units (C) 6 units (D) 8 units

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 a polyhedron has 7 faces and 10 vertices, then the number of edges of the polyhedron is 15
Reason (R): Euler's formula for any polyhedron is $F + V - E = 2$
 (A) a (B) b (C) c (D) d
59. **Assertion (A):** A cubic metre of gold is extended by hammering so as to cover an area

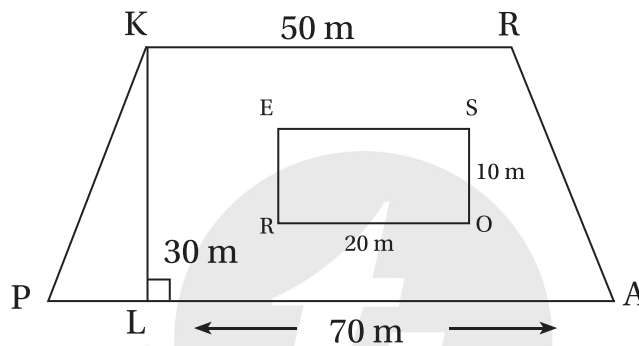
of 6 hectares. Then the thickness of the gold is 0.0017 cm.

Reason (R) : Total volume of a solid does not change even when its shape changes i.e. old volume = New volume. (This principal is known as 'volume remains unchanged')

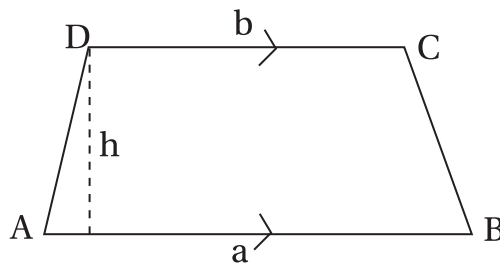
- (A) a (B) b (C) c (D) d

Case Study Based Questions (60–62):

A park PARK is being landscaped in the shape of trapezium. The length of the parallel sides are 50 m and 70 m and the distance between these parallel sides is 30 m. Also a rectangular flower bed ROSE of dimensions 20 m by 10 m is to be placed within the park. On the basis of this information answer the following questions.



60. Calculate the area of the park.
 (A) 1000 m^2 (B) 1800 m^2 (C) 2500 m^2 (D) 1300 m^2
61. If the cost of land scaping is ₹ 5 per square meter, then what is the total cost to landscape the park?
 (A) ₹ 9,000 (B) ₹ 10,000 (C) ₹ 8,000 (D) ₹ 11,000
62. Calculate the perimeter of the flower bed.
 (A) 40 m (B) 20 m (C) 50 m (D) 60 m
63. Area of trapezium ABCD is



- (A) $\frac{1}{2}(a - b) \times h$ sq. units (B) $\frac{1}{2}(a + b) \times h$ sq. units
 (C) $\frac{1}{2}(b - a) \times h$ sq. units (D) $(a + b) \times h$ sq. units

64. The number of vertices of a pyramid whose base is a polygon of n -sides is
 Ⓐ $(n + 1)$ Ⓑ $2(n + 1)$ Ⓒ $\frac{(n+1)}{2}$ Ⓓ $2(n - 1)$
65. Volume of a cube = ?
 Ⓐ $\left(\sqrt{\frac{\text{Surface area}}{6}}\right)^3$ Ⓑ $\frac{\text{Surface area}}{6}$ Ⓒ $\sqrt{\frac{\text{Surface area}}{6}}$ Ⓓ None of these
66. If $\frac{x+1}{2x+3} = \frac{3}{8}$, then the value of x is
 Ⓐ $\frac{1}{4}$ Ⓑ $\frac{1}{3}$ Ⓒ $\frac{1}{6}$ Ⓓ $\frac{1}{2}$
67. How many diagonals are there in a heptagon?
 Ⓐ 7 Ⓑ 14 Ⓒ 16 Ⓓ 15
68. $(a + b)(a^2 + b^2)(a^4 + b^4)$ is equal to
 Ⓐ $\frac{a^8 - b^8}{a - b}$ Ⓑ $(a^8 - b^8)(a - b)$ Ⓒ $a^{16} - b^{16}$ Ⓓ $a^8 + b^8$
69. If $7y8x3$ is exactly divisible by 9, then the least value of $x + y$ is
 Ⓐ 0 Ⓑ 9 Ⓒ 3 Ⓓ 4
70. What is $\sqrt[3]{389017}$?
 Ⓐ 75 Ⓑ 79 Ⓒ 73 Ⓓ 77
71. The total surface area of a cube is $\frac{243}{8} \text{m}^2$. The volume of the cube is
 Ⓐ $11\frac{25}{64} \text{m}^3$ Ⓑ $\frac{243}{6} \text{m}^3$ Ⓒ $\frac{243}{8} \text{m}^3$ Ⓓ None of these
72. A triangular prism has
 Ⓐ 9 edges Ⓑ 6 edges Ⓒ 4 edges Ⓓ 3 edges
73. The parallel sides of an isosceles trapezium are 4 cm and 8 cm and length of one non-parallel side is $\sqrt{13}$ cm. The area of the trapezium is
 Ⓐ 20cm^2 Ⓑ 22cm^2 Ⓒ 16cm^2 Ⓓ 18cm^2
74. The rates of working of A and B are in the ratio 5 : 6. The number of days taken by them to finish the work are in the ratio
 Ⓐ 5 : 6 Ⓑ 6 : 5 Ⓒ 10 : 11 Ⓓ 11 : 10
75. A 100 m long train with a speed of 30 km/h can cross a man in how much seconds?
 Ⓐ 50 Ⓑ 15 Ⓒ 14 Ⓓ 12

76. Reproduction by budding takes place in
 (A) Hydra (B) Amoeba (C) Paramecium (D) Bacteria
77. Which of the following is not a part of human sperm?
 (A) Sperm duct (B) Middle piece (C) Head (D) Tail
78. After fertilisation, the resulting cell which gives rise to a new individual, is the
 (A) Zygote (B) Foetus (C) Ovum (D) Embryo
79. The male gamete is called
 (A) Sperm (B) Embryo (C) Ovum (D) Zygote
80. Where does fertilisation take place?
 (A) Fallopian tubes (B) Vagina
 (C) Uterus (D) Any one of the ovaries
81. In humans, how many eggs are released by an ovary every month?
 (A) One (B) Two (C) Four (D) Many
82. Which of the following is a viviparous animal?
 (A) Cobra (B) Salmon
 (C) Salamander (D) Dolphin

Assertion-Reason type Questions (83-85):

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.
83. **Assertion:** In asexual reproduction, only one parent is involved
Reason: In asexual reproduction, only one offspring is formed at a time.
 (A) A (B) B (C) C (D) D
84. **Assertion:** The fusion of the male and female gametes is called fertilisation.
Reason: In humans, the male gamete is the motile gamete.
 (A) A (B) B (C) C (D) D

85. Assertion: The testes lie outside the abdominal cavity in sacs of loose skin or scrotum.

Reason: The scrotum regulates the temperature of the testis

- (A) A (B) B (C) C (D) D

Case Based Questions (86–90):

Read the given passage and answer the following questions :

The female reproductive system contains a pair of female gonads (A) which produce the female gametes (B). Over each female gonad is a tube (C) which shows finger like projections at one end. The other end of this tube is connected to the womb (D). The womb is connected to the internal genitalia or vagina by a narrow portion (E).

86. Name A and B in the right order.

- (A) A is ovary ; B is zygote (B) A is ovary ; B is egg
(C) A is egg ; B is ovary (D) A is ovary ; B is sperm

87. The tube C refers to the

- (A) Fallopian tube (B) Cervix (C) Uterus (D) Uterine wall

88. The part called womb (D) is actually the

- (A) Oviduct (B) Vas deferens
(C) Fallopian tube (D) Uterus

89. The part connecting the womb with the vagina is

- (A) Vas deferens (B) Oviduct (C) Cervix (D) None

90. Fertilisation in males is seen in :

- (A) Seals (B) Sea horse (C) Whales (D) Sharks

91. Turning and loosening the soil :

- (A) Brings the nutrient rich layers to the top
(B) Helps in creating air spaces in the soil
(C) Loose soil helps in easy penetration of the roots
(D) All of these

92. Where is the Pachmarhi Biosphere Reserve located?

- (A) Madhya Pradesh (B) Uttar Pradesh (C) West Bengal (D) Tamil Nadu

93. Which is a consequence of deforestation?

- (A) Soil erosion (B) Loss of biodiversity
(C) Disruption of water cycles (D) All of these

94. Rohu, Catla and Hilsa are

- Ⓐ Edible fishes Ⓑ Edible molluscs Ⓒ Poultry product Ⓓ Cattle meat

95. Protozoans are

- Ⓐ Unicellular Ⓑ Multi cellular Ⓒ Both A and B Ⓓ Acellular

Assertion-Reason type Questions (96-97):

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.

96. **Assertion:** Birds are not viviparous

Reason: Birds lay eggs

- Ⓐ A Ⓑ B Ⓒ C Ⓓ D

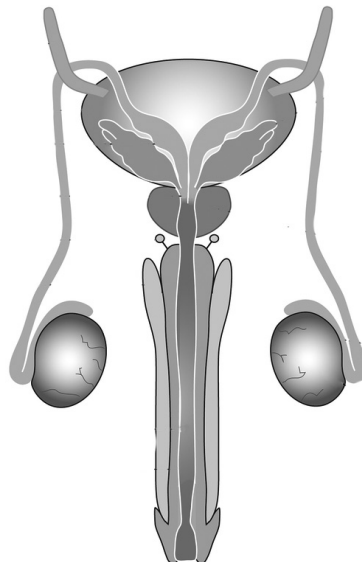
97. **Assertion:** The placenta connects the mother to the foetus.

Reason: The placenta develops as soon as ovulation takes place.

- Ⓐ A Ⓑ B Ⓒ C Ⓓ D

Case Based Questions (98-100):

Study the diagram given below and answer the following questions :



98. Which of these is/are accessory reproductive glands of the male reproductive system?

- Ⓐ Prostate gland
- Ⓑ Seminal vesicles
- Ⓒ Cowper's glands
- Ⓓ All of these

99. The testes are connected to the vas deferens through

- Ⓐ Urethra
- Ⓑ Epididymis
- Ⓒ Penis
- Ⓓ Ureter

100. The testis not only produce sperms, but also produce

- Ⓐ Hormone
- Ⓑ Enzyme
- Ⓒ Urine
- Ⓓ Ovum



Space For Rough Works

Space For Rough Works