



Monthly Progressive Test

Class: VIII

Subject: PCMB



Test Booklet No.: MPT-06

Test Date:

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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 16012026.
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 scribble 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. A force of 10 N acts on an object of mass 2 kg. The acceleration produced is:
 A 2 m/s^2 B 5 m/s^2 C 10 m/s^2 D 20 m/s^2
2. Which type of friction acts on a body rolling on a surface?
 A Sliding friction B Static friction C Rolling friction D Fluid friction
3. The SI unit of pressure is:
 A Dyne B Newton C Pascal D Joule
4. Which of the following will reduce friction?
 A Rough surfaces B Lubrication
 C Increasing weight D Pressing surfaces harder
5. Sound cannot travel through:
 A Air B Water C Iron D Vacuum
6. The pitch of sound depends on its:
 A Amplitude B Speed C Frequency D Loudness
7. Which liquid is commonly used as an electrolyte in electroplating?
 A Distilled water B Salt solution C Sugar solution D Alcohol
8. Which natural phenomenon is caused due to electric discharge in the atmosphere?
 A Earthquake B Cyclone C Lightning D Volcano
9. The device used to protect buildings from lightning is called:
 A Fuse B Conductor C Lightning conductor D Insulator
10. The image formed by a plane mirror is always:
 A Real and inverted B Virtual and erect C Real and erect D Virtual and inverted
11. Which of the following is a luminous object?
 A Moon B Mirror C Candle flame D Book
12. The star nearest to the Earth is:
 A Alpha Centauri B Sun C Sirius D Pole star
13. Which planet is known as the Red Planet?
 A Earth B Mars C Jupiter D Venus
14. The path followed by planets around the Sun is called:
 A Axis B Orbit C Rotation D Revolution
15. Friction always acts in the direction:
 A Of motion B Opposite to motion C Downward D Upward

■ Assertion-Reason type Questions (Q16–Q19)

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.
 C] Assertion is False and Reason is true.

16. **Assertion:** Friction produces heat.

Reason: Friction opposes motion between two surfaces.

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

17. **Assertion:** Sound needs a medium to travel

Reason: Sound is a form of energy.

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

18. **Assertion:** Lightning conductor protects tall buildings.

Reason: It provides a safe path for electric discharge.

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

19. **Assertion:** The Moon does not have its own light.

Reason: It reflects sunlight.

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

Case Based Type

Case Study 1: A wooden block is pushed on a rough surface and then on a smooth surface.

20. On which surface will friction be more?

- (A) Smooth surface (B) Rough surface (C) Both equal (D) Cannot be determined

21. Which method can reduce friction between surfaces?

- (A) Increasing roughness (B) Applying lubricants (C) Increasing load (D) Pressing harder

22. Rolling friction is always:

- (A) More than sliding friction (B) Equal to sliding friction
 (C) Less than sliding friction (D) Zero

Case Study 2: During a thunderstorm, lightning is observed followed by thunder after a few seconds.

23. The delay between lightning and thunder is due to difference in:

- (A) Energy (B) Speed of light and sound
 (C) Frequency (D) Wavelength

24. Which of the following is the safest place during lightning?

- (A) Under a tree (B) Open field (C) Inside a building (D) Near water body

25. Which wave travels faster?

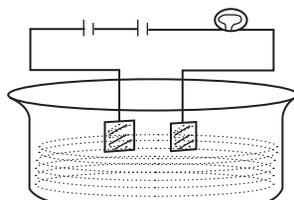
- (A) Sound wave (B) Water wave (C) Light wave (D) Seismic wave

Chemistry

26. Current is passed through copper sulphate solution using copper plates as the two electrodes which of the following do you expect to observe ?

- (A) deposition of copper on the cathode (B) deposition of copper on the anode
 (C) deposition of copper on both electrodes (D) no deposition of copper on any electrode

27. Materials that allow the flow of electric current through them are _____ conductors of electricity.
 (A) bad (B) good (C) least (D) None of these
28. Which of these is the least polluting fuel ?
 (A) petrol (B) CNG (C) diesel (D) coal
29. The device which can be used to detect very small current flowing in an electric circuit is :
 (A) LEAD (B) MCB (C) LED (D) None of these
30. Which of the following solution will not make the bulb glow in figure ?



- (A) Sodium Chloride (B) Copper sulphate (C) Silver nitrate (D) Alcohol
31. When electric current is passed through a conducting solution there is a change of colour of the solution. This indicates :
 (A) the chemical effect of current (B) the heating effect of current
 (C) the magnetic effect of current (D) the lightning effect of current
32. Which of the following metals is used in electroplating to make objects appear shining ?
 (A) iron (B) copper (C) chromium (D) Aluminium
33. The process of depositing a thin layer of any superior metal over an object of a cheaper metal with the help of electricity is called :
 (A) electro refining (B) electrometallurgy (C) electroplating (D) None of the above.
34. Which is true when LED is connected with battery ?
 (A) The longer leads are connected with negative terminal and shorter lead is connected with positive terminal.
 (B) The shorter lead is connected with negative terminal and longer lead is connected with positive terminal.
 (C) Both leads are connected with negative terminal.
 (D) Both leads are connected with positive terminal.
35. Electrical appliances are not touched with wet hand because :
 (A) Electrical appliances will face colour change
 (B) Electrical appliances will face rusting
 (C) Electrical appliances will start to conduct electricity
 (D) Electrical appliances will start to burn.
36. What is the colour of copper sulphate solution ?
 (A) red (B) blue (C) yellow (D) green
37. When acidified copper sulphate solution is electrolysed with copper electrodes then :
 (A) colour of the solution gets faded (B) colour of the solution gets darken
 (C) A colourless gas is released (D) Colour of the solution remains unchanged

38. Flow of electricity is termed as :
 (A) electroplating (B) electric current (C) electrolyte (D) electrodes
39. Among the given substances ; which are bad conductors of electricity ?
 (I) Piece of Coal (II) Iron nail (III) Eraser
 (A) I, II, III (B) I, II (C) I, III (D) II, III
40. Which one of the following solution will not conduct electricity ?
 (A) Lemon juice (B) Vinegar (C) Vegetable oil (D) Tap water.

Assertion and Reason Based Questions (Q. 41 - 44)

- (A) Assertion is true, Reason is true, Reason is a correct explanation of Assertion.
 (B) Assertion is true, Reason is true, Reason is not a correct explanation of Assertion.
 (C) Assertion is true, Reason is false.
 (D) Assertion is false, Reason is true.
41. **Assertion :** Adding of sugar makes pure water conducting.
Reason : Electrolysis is a chemical changed.
 (A) A (B) B (C) C (D) D
42. **Assertion (A) :** Distilled water is poor conductor of electricity.
Reason (R) : Glowing of a bulb is due to heating effect of electric current.
 (A) A (B) B (C) C (D) D
43. **Assertion (A) :** Aqueous solution of calcium chloride is a good conductor of electricity.
Reason (R) : Both calcium cation and chloride anion are responsible for electricity conduction.
 (A) A (B) B (C) C (D) D
44. **Assertion :** When an experiment regarding electrical conductivity is done with vinegar solution then iron made container is not used.
Reason : Vinegar solution reacts with iron and the experiment cannot be done properly.
 (A) a (B) a (C) a (D) a

Case Based Question-1 (Q. 45-47)

Good conductors are those which can spontaneously conduct electricity. Conductors can be solid, liquid and gaseous. On the other hand non-conducting materials can not conduct electricity and they are termed as insulators. For electrical conduction the first criteria is there must be a circuit. Electrical energy can be converted into mechanical energy, heat energy chemical energy etc.

45. In case of ringing of bells in your school the correct option is :
 (A) electrical energy converted into chemical energy. (B) mechanical energy converted into electrical energy
 (C) electrical energy converted into mechanical energy (D) chemical energy converted into mechanical energy
46. Conductors are :
 (A) solution, gaseous (B) gaseous, liquid
 (C) solids, liquids (D) solids, liquids and gaseous
47. An electric current can produce
 (A) heating effect (B) chemical effect (C) magnetic effect (D) All of these

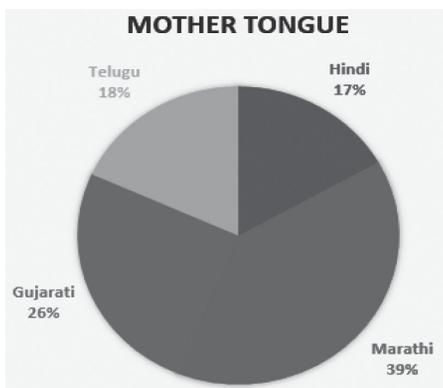
Case Based Question-II (Q. 47-50)

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.

48. Which most commonly used liquid is decomposed by the process of electrolysis ?
 (A) Water (B) Petrol (C) diesel (D) Milk
49. Which of following process is based on he principles of electrolysis ?
 (A) Rusting (B) Colour change of electrolyte
 (C) electroplating (D) None of these.
50. Tester is used to
 (A) Identify a body that can conduct electricity (B) Identify a coloured body
 (C) Identify a coloured body (D) Identify a liquid, present in a solid body.

Mathematics

51. Total number of people in society is 1500. How many people speak Hindi?

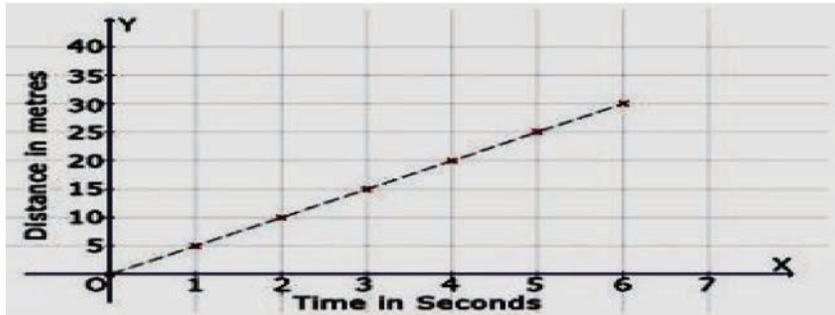


- (A) 255 (B) 270 (C) 390 (D) 585

52. A bag has 5 red, 3 white and 2 black balls. What is the probability of picking a black or red ball from bag?

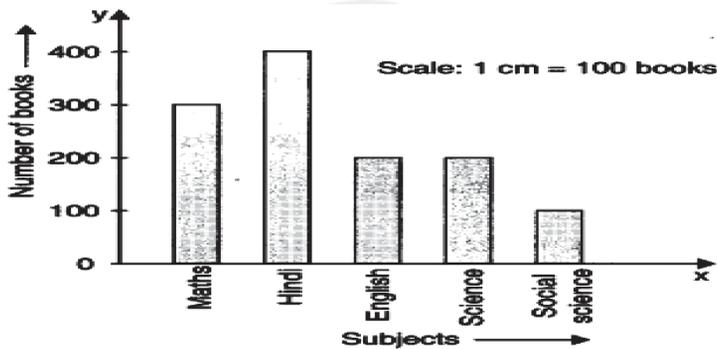
- (A) $\frac{1}{5}$ (B) $\frac{7}{10}$ (C) $\frac{1}{4}$ (D) $\frac{2}{15}$

53. From the graph find the distance covered in 6 seconds.



- (A) 30 m (B) 35 m (C) 25 m (D) none of these

54. How many books are there of the subject whose books are maximum?



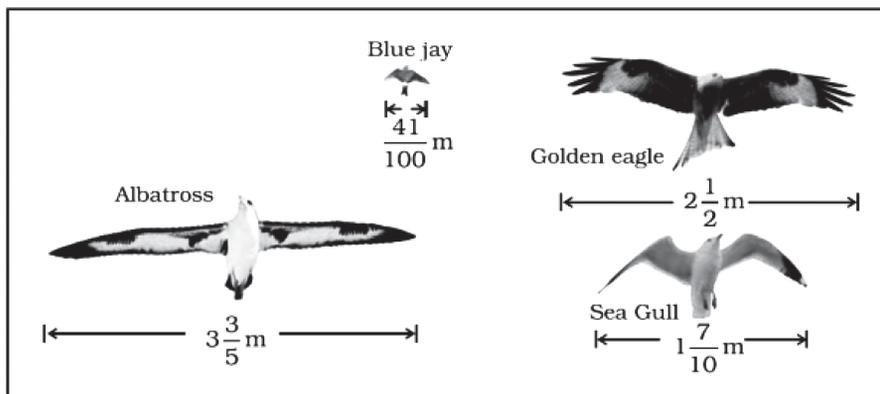
- (A) 100 (B) 200 (C) 300 (D) 400

55. The coordinates of the mirror image in the y-axis of point (9,8) will be

- (A) (-8, -9) (B) (-9, 8) (C) (9, 8) (D) (-9, -8)

CASE STUDY BASED QUESTION- I (Q.56- Q. 58):

The diagram shows the wingspans of different species of birds. Use the diagram to answer the question given below:



56. How much longer is the wingspan of an Albatross than the wingspan of a Sea gull?

- (A) $\frac{19}{5}$ m (B) $\frac{11}{2}$ m (C) $\frac{19}{10}$ m (D) $\frac{11}{100}$ m

57. How much longer is the wingspan of a Golden eagle than the wingspan of a Blue jay?

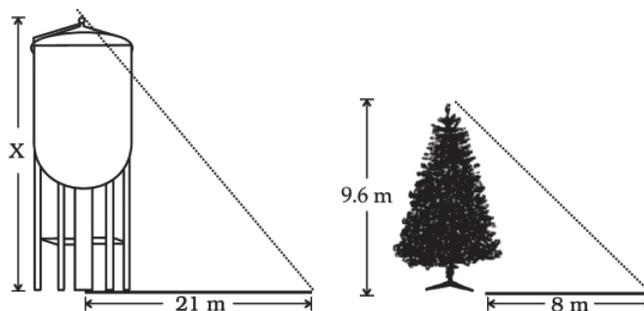
- (A) $\frac{211}{100}$ m (B) $\frac{209}{100}$ m (C) $\frac{111}{100}$ m (D) $\frac{51}{100}$ m

58. Find the total wingspans of Albatross and Golden eagle.

- (A) $\frac{61}{10}$ m (B) $\frac{21}{10}$ m (C) $\frac{51}{10}$ m (D) $\frac{71}{10}$ m

CASE STUDY BASED QUESTION- II (Q.59 - Q. 61):

One day Mathematics teacher explaining about Direct and Inverse proportion with the help of many examples. He has given the example of relation between the length of shadow and height of the water tank. A water tank casts a shadow 21 m long. A tree of height 9.6 m casts a shadow 8 m long at the same time.



On basis of the above information answer the following questions.

59. Find the height of the water tank in the above situation.

- (A) 25 m (B) 25.1 m (C) 25.2 m (D) 26.2 m

60. A vertical pole of a length 6 m casts a shadow 4m long on the ground and at the same time a tower casts a shadow 28 m long. Find the height of the tower.

- (A) 45 m (B) 25 m (C) 55 m (D) 42 m

61. A vertical stick 12 m long casts a shadow 8 m long on the ground. At the same time, a tower of 60 m casts a shadow of length x m on the ground. Determine the value of x.

- (A) 40 (B) 45 (C) 30 (D) 42

ASSERTION-REASON BASED QUESTIONS (Q.62 - Q.65):

DIRECTIONS: In each of the questions given below, there are two statements marked as Assertion (A) and Reason (R). Mark your answer as per the codes provided below:

- Both A and R are true and R is the correct explanation of A.
- Both A and R are true but R is not the correct explanation of A.
- A is true but R is false.
- A is false but R is true.

62. **Assertion (A):** The smallest number by which the number 108 must be multiplied to obtain a perfect cube is 3.

Reason (R): The perfect cube is the result of multiplying the same integer three times.

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

63. **Assertion (A):** 15 men can mow 40 hectares of land in 1 day. 6 men mow in 1 day=16 hectares

Reason (R): A direct proportion shows the direct the relation between two quantities.

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

64. **Assertion (A):** The square of any number ending with 5 will always end in 25.

Reason (R): $(10a + 5)^2 = 100a^2 + 100a + 25$

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

65. **Assertion (A):** If $x + \frac{1}{x} = 4$, then $x^2 + \frac{1}{x^2} = 16$.

Reason (R): $\left(x + \frac{1}{x}\right)^2 = x^2 + 2 + \frac{1}{x^2}$.

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

66. Simplify: $\frac{-4}{5} \times \frac{3}{7} \times \frac{15}{16} \times \left(\frac{-14}{9}\right)$

- (A) 1 (B) 0 (C) 2 (D) $\frac{1}{2}$

67. Find the solution of $\frac{x+6}{4} + \frac{x-3}{5} = \frac{5x-4}{8}$

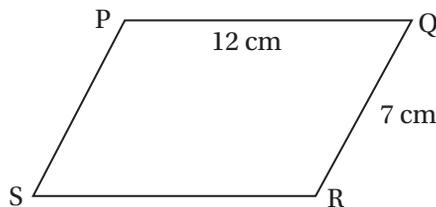
- (A) 8 (B) -8 (C) 4 (D) none of these

68. The angle sum of all interior angles of a convex polygon of sides 7 is

- (A) 180° (B) 540° (C) 630° (D) 900°

69. The perimeter of parallelogram PQRS is:

- (A) 12 cm (B) 7 cm (C) 38 cm (D) 19 cm



70. The smallest number by which 12348 must be divided to obtain a perfect square is

- (A) 3 (B) 5 (C) 4 (D) 7

71. A cubical box has a volume of 512000 cubic cm. What is the length of the side of box?

- (A) 800 cm (B) 80 cm (C) 60 cm (D) 600 cm

72. A shop has 500 parts, out of which 5 are defective. What percent are not defective?

- (A) 75% (B) 99% (C) 90% (D) none of these

73. Raghu bought an almirah for ₹6250 and spent ₹375 on its repairs. Then he sold it for ₹6890. Find his gain or loss percent.
- (A) 5% (B) 4% (C) 6% (D) $16\frac{2}{3}\%$
74. The compounded interest on ₹30000 at 7% per annum for a certain time is ₹4347. The time is
- (A) 2 years (B) $2\frac{1}{2}$ years (C) 3 years (D) 4 years
75. The standard form of 9,030,000,000 is given by _____.
- (A) 9.03×10^9 (B) 90.3×10^7 (C) 903×10^6 (D) 9.03×10^{-9}

Biology

76. The number of modes by which animals reproduce are
- (A) three (B) two (C) four (D) none of these
77. Binary fission is observed in
- (A) Human being (B) Amoeba (C) Yeast (D) Hydra
78. External fertilization is observed in
- (A) hen (B) frog (C) buffalo (D) cow
79. Male gametes in humans are:
- (A) round and non motile (B) round and motile
(C) with a pointed head and a long tail (D) none of the above
80. Internal fertilisation takes place
- (A) inside female body (B) inside male body
(C) outside male body (D) outside female body
81. Adolescence is the period between:
- (A) 30–40 years (B) 22–28 years (C) 11–18 years (D) 5–10 years
82. When a sperm having X-chromosome fuses with an ovum, the child born will be
- (A) male (B) female
(C) male & female twin (D) depends on chance of fusion
83. Chromosomes in the nuclei of human cells are present as
- (A) 25 pairs (B) 24 pairs (C) 23 pairs (D) 22 pairs
84. Larynx is also called
- (A) voice box (B) respiratory organ (C) tongue (D) none
85. The period of maturity of reproductive organs is called
- (A) adolescence (B) gestation (C) menstruation (D) none
86. Generally, the fertilised egg develops into :
- (A) two embryos (B) one embryo (C) two zygotes (D) one zygote

87. Which structure is responsible for transferring food and oxygen from the mother to the foetus?
 (A) Placenta (B) Oviduct (C) Sperm (D) Ovary
88. Foetus is the
 (A) Young embryo (B) Well developed embryo
 (C) Embryo with the umbilical cord (D) Fertilised ovum
89. In humans, zygote is formed in the:
 (A) Ovary (B) Oviduct (C) Uterus (D) Urethra
90. Which gland produces the growth hormone?
 (A) Thyroid (B) Pituitary (C) Adrenal (D) Testis

The questions 16 to 19 have two statements – Assertion (A) and Reason (R). Of the two statements, mark the correct answer from the options 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.

91. **Assertion (A):** In production of offspring, formation of a zygote is necessary.

Reason (R): There are two modes of reproduction in animals.

92. **Assertion (A):** Fertilisation can be external or internal.

Reason (R): In external fertilisation, gametes fuse inside the body.

93. **Assertion (A):** Adolescence is accompanied by physical and emotional changes.

Reason (R): Hormones released by the kidneys control these changes.

94. **Assertion (A):** The first menstrual flow in girls is called menarche.

Reason (R): The unfertilised egg is shed out by menstrual flow

Case based question (95-97)

Read the given passage and answer the following questions:

During a poster making competition in school, Ravi made a poster in class about adolescence, highlighting the reasons for the change in voice in adolescent boys. While working on the assignment, he also found out about changes that occur in both boys and girls during this stage of their lives. He also learnt about how these changes differ in boys and girls.

95. The voice deepens in adolescent boys because the:

- (A) Nose grows (B) Larynx enlarges
 (C) Heart enlarges (D) Brain grows

96. During adolescence, the chemical messengers released by endocrine glands are called:

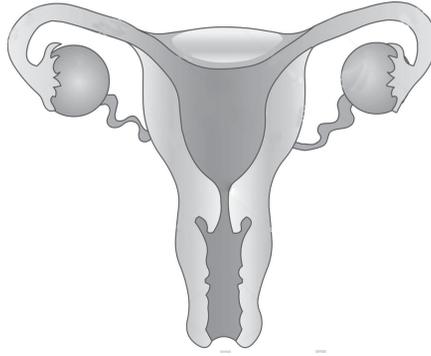
- (A) Enzymes (B) Vitamins (C) Hormones (D) All of the above

97. Which of the following is a secondary sexual characteristic in girls?

- (A) Development of ovaries (B) Growth of uterus
 (C) Development of breasts (D) Fertilization

Diagram based question (98-100)

Study the given diagram and answer the following questions (98-100):



98. The connection between uterus and vagina is :
- (A) cervix (B) urethra (C) ureter (D) oviduct
99. Which structure takes part in the process of implantation?
- (A) Dividing zygote (B) Young embryo (C) Mature embryo (D) Foetus
100. What happens to the thickened uterine lining if there is no fertilisation?
- (A) It is destroyed in the body (B) It remains unaltered
(C) It is released through the urine (D) It is shed out by the process of menstruation