



Monthly Progressive Test

Class: VIII

Subject: PCMB



Test Booklet No.: MPT-05

Test Date:

1	2	1	2	2	0	2	5
---	---	---	---	---	---	---	---

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 MPT05 12122025.
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



Physics

- A car starts from rest and reaches a speed of 20 m/s in 10 seconds. It continues with the same speed for the next 15 seconds and finally slows down uniformly to rest in 5 seconds. What is the acceleration during the first phase of motion?
(A) 1 m/s^2 (B) 2 m/s^2 (C) 3 m/s^2 (D) 4 m/s^2
- A force of 50 N is applied on a box that moves 6 m on a rough surface. If 10 N of force is lost to friction, calculate the total work done by the applied force.
(A) 240 J (B) 300 J (C) 200 J (D) 350 J
- A machine uses 2000 J of energy in 20 seconds to lift a 10 kg load. If $g = 10 \text{ m/s}^2$, what is the height raised by the load?
(A) 5 m (B) 10 m (C) 20 m (D) 15 m
- A sound wave travels through air at 340 m/s. If the frequency of the sound is 170 Hz, calculate its wavelength.
(A) 1 m (B) 2 m (C) 0.5 m (D) 4 m
- A spring stretches 4 cm when a weight of 2 N is hung from it. How much will it stretch for a weight of 6 N?
(A) 6 cm (B) 8 cm (C) 12 cm (D) 10 cm
- Pitch of sound depends—
(A) frequency (B) Wavelength (C) velocity (D) Amplitude
- The density of a metal cube is 8 g/cm^3 . If its mass is 256 g, calculate its volume.
(A) 32 cm^3 (B) 16 cm^3 (C) 64 cm^3 (D) 20 cm^3
- A bus travels 300 km in 5 hours. It then travels another 200 km in 3 hours. What is its average speed?
(A) 50 km/h (B) 60 km/h (C) 62.5 km/h (D) 75 km/h
- A mirror produces an image that is upright, virtual, and smaller in size than the object. Which type of mirror is used?
(A) Plane (B) Convex (C) Concave (D) Both plane and convex
- A 500 mL container holds water of mass 0.5 kg. What is the density of water in g/cm^3 ?
(A) 1 g/cm^3 (B) 0.5 g/cm^3 (C) 2 g/cm^3 (D) 0.1 g/cm^3
- Which instrument records an earthquake—
(A) Seismograph (B) Electroscope (C) Lightning conductor (D) None of these
- A hydraulic press multiplies force by 10. If 20 N force is applied on the smaller piston, what is the output force?
(A) 200 N (B) 100 N (C) 220 N (D) 20 N
- What help us to see colours?
(A) Red cells (B) Cone cells (C) Ciliary muscle (D) Pupil
- Light takes 1.28 seconds to reach Earth from the Moon. If the distance is $3.84 \times 10^8 \text{ km}$, calculate speed of light.
(A) $3 \times 10^8 \text{ km/s}$ (B) $2 \times 10^8 \text{ km/s}$ (C) $4 \times 10^8 \text{ km/s}$ (D) $3.84 \times 10^8 \text{ km/s}$
- A wheel rotates 600 times in 1 minute. What is its frequency in Hz?
(A) 5 Hz (B) 10 Hz (C) 15 Hz (D) 20 Hz

Assertion and Reason: (Q. No. 16 — Q. No. 19)

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.

16. Assertion: Pressure increases with depth in liquids.

Reason: Liquids are incompressible and their molecules transmit force equally in all directions.

- Ⓐ Both A and R are true, and R explains A Ⓑ Both A and R are true, but R does not explain A
 Ⓒ A is true but R is false Ⓓ A is false but R is true

17. Assertion (A): Convex lenses can form real images.

Reason (R): Convex lenses diverge light rays after refraction.

- Ⓐ Both A and R are true, and R explains A Ⓑ Both A and R are true, but R does not explain A
 Ⓒ A is true but R is false Ⓓ A is false but R is true

18. Assertion (A): An electric fuse protects appliances.

Reason (R): Fuse wire has low melting point and breaks when excessive current flows.

- Ⓐ Both A and R are true, and R explains A Ⓑ Both A and R are true, but R does not explain A
 Ⓒ A is true but R is false Ⓓ A is false but R is true

19. Assertion (A): Sound travels faster in solids than in gases.

Reason (R): Particle density is highest in solids.

- Ⓐ Both A and R are true, and R explains A Ⓑ Both A and R are true, but R does not explain A
 Ⓒ A is true but R is false Ⓓ A is false but R is true

Case Study Based Question (Q20 to Q22)

A student sets up an experiment to study refraction. A ray of light passes from air into water and bends towards the normal. The student measures the angle of incidence as 40° and the angle of refraction as 25° . They observe the path of the refracted ray, the bending of light, and how different mediums affect speed. The distance between the student and his image is:

20. Bending of light from air to water happens because:

- Ⓐ Light speeds up Ⓑ Light slows down Ⓒ Light disappears Ⓓ Water absorbs light

21. The angle between the normal and the refracted ray is:

- Ⓐ 15° Ⓑ 25° Ⓒ 40° Ⓓ 65°

22. The phenomenon observed is:

- Ⓐ Reflection Ⓑ Refraction Ⓒ Dispersion Ⓓ Total internal reflection

Case Study Based Question (Q23 to Q25)

A boy uses a simple electric circuit consisting of a battery, switch, connecting wires, and a bulb. When the switch is turned ON, the bulb glows. After a few minutes, the bulb becomes warm. The boy wonders how electrical energy converts to heat and light energy and how current flows continuously.

23. The bulb gets warm due to:

- Ⓐ Chemical energy Ⓑ Heat energy Ⓒ Kinetic energy Ⓓ Sound energy

24. The energy transformation inside the bulb is:

- Ⓐ Electrical \rightarrow Light + Heat Ⓑ Heat \rightarrow Electrical
 Ⓒ Light \rightarrow Electrical Ⓓ Mechanical \rightarrow Heat

[3]

25. Current flows only when:

- Ⓐ Circuit is closed
Ⓑ Bulb is fused
Ⓒ Battery is removed
Ⓓ Switch is off

Chemistry

26. An electric current can produce heating

- Ⓐ Heating effect only
Ⓑ Chemical effect only
Ⓒ Magnetic effect only
Ⓓ Chemical, heating and magnetic effects

27. A student lists the characteristics of the outermost zone of the flame as shown:

- (A) It gives flame its blue colour
(B) It is the least zone of the flame
(C) It is the zone of complete combustion
(D) Which of these statement(s) explain(s)

Reason why goldsmiths blow air in this zone of flame?

- Ⓐ Only a
Ⓑ Only C
Ⓒ Both A & C
Ⓓ Both B and C

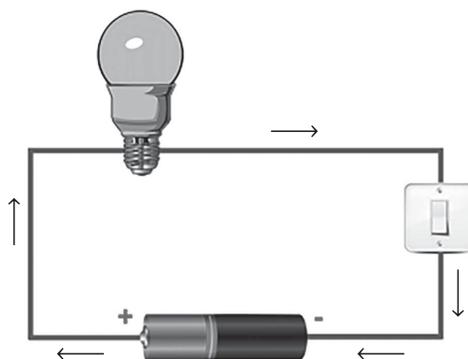
28. The tables shows the ignition temperature of four substances:

Substance	Ignition Temperature (°C)
A	80
B	39
C	110
D	25

Which substance will catch fire easily when heated at 50°C?

- Ⓐ A & C
Ⓑ B & D
Ⓒ C & D
Ⓓ A & D

29. A student makes an electric circuit as shown:



The student notices that the bulb in the circuit is not glowing even though the circuit is complete. His friend advises him to use a LED at the place of the bulb. Why an LED is preferred over bulb in the circuit?

- Ⓐ LEDs are brighter than bulbs
Ⓑ LEDs consume more energy than a bulb
Ⓒ LEDs eliminate the use of the battery in the circuit
Ⓓ LEDs can glow even when a weak current flow in the circuit

30. What happens when current is passed in the solution of copper sulphate having iron nail as cathode and copper rod as anode?
- (A) Copper forms a layer on the iron nail (B) Iron gets deposited on the copper rod
(C) Iron rod completely dissolves in the solution (D) Sulphur forms a layer on the walls of the Beaker
31. Choose the correct statement from the following:
- (A) It is difficult to transport natural gas through pipes
(B) The disadvantage of natural gas is that it cannot be used directly for burning in homes
(C) Natural gas is stored under high pressure as compressed natural gas
(D) Natural gas can not be used for power generation
32. In an experiment 4.5kg of a fuel was completely burn. The heat produced was measured to be 1,80,000kJ; Calculate the calorific value of the fuel.
- (A) 40,000 kJ/kg (B) 45 kJ/kg (C) 20,000 kJ/kg (D) 4000 kJ/kg
33. Which one of the following has the highest calorific value?
- (A) Kerosene (B) Petrol (C) L.P.G (D) Hydrogen
34. The article to be electroplated during electroplating is kept at
- (A) anode (B) cathode
(C) either anode or cathode (D) all of these
35. Which of the following gas causes the highest Global Warming
- (A) methane (B) carbondioxide (C) nitrogen (D) oxides of nitrogen
36. The process of separating the various constituents of petroleum is called:
- (A) cracking (B) synthesizing (C) refining (D) separating
37. We can save energy by using:
- (A) Bulb (B) Tube light (C) CFLS (D) LFT
38. During electrolysis of water concentrated H_2SO_4 is added few drops. What is the function of it?
- (A) reactant (B) promoter (C) product (D) catalyst
39. Calorific value of fuels P, Q, R, S and T are in the order $T > R > Q > S > P$ P, Q, R, S and T could be respectively:
- (A) Hydrogen, LPG, Petrol, wood, cow-dung cake (B) LPG, petrol, Hydrogen, wood, cow-dung cake
(C) LPG, Hydrogen; petrol, wood, cow-dung cake (D) Petrol, LPG, Hydrogen, wood and cow-dung cake
40. The products obtained by the destructive distillation of coal is/are:
- (A) coal tar (B) coke (C) coal gas (D) all of these

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

Direction : 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 :

- 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.
41. **Assertion (A) :** The temperature at which substance starts burning is called ignition temperature
Reason (R) : A chemical process in which a substance react with oxygen to give of heat and light is called combustion
- (A) a (B) b (C) c (D) d

42. **Assertion (A):** Dilute Hydrochloric acid is a good conductor of electric current
Reason (R): Glowing of bulb is due to the heating effect of electric current.
 (A) a (B) b (C) c (D) d
43. **Assertion (A):** Gases like CO_2 , water vapour, methane is called green house gas.
Reason (R): These gases are responsible for global warming.
 (A) a (B) b (C) c (D) d
44. **Assertion (A):** A bulb glows due to heating effect of current.
Reason (R): Bulb is used in a circuit to detect the current flow:
 (A) a (B) b (C) c (D) d

Case Base Question (Q.45 to Q.47)

LED (Light Emitting Diode) is used to check whether a system is conducting electricity or not. LED has two ends one is long (connected with the positive terminal of the battery) and another end is small (connected with the negative terminal of the battery). LED consumes less amount of electricity than bulbs and there is no chance of disruption of the filament. LED glows better than normal bulbs and due to its high range of stability, it is used to prepare traffic and railway signals, household lights, etc.

45. The full form of LED is:
 (A) low emitting diode light (B) light emitting diode
 (C) long emitting diode (D) light emission and refraction
46. To construct the railway signals which is used?
 (A) only LED (B) only bulb (C) both LED & bulb (D) none of LED & bulb
47. Filament is present in:
 (A) Only LED (B) Only bulb (C) Both LED & bulb (D) None of LED & bulb

Case Base Question (Q.48 to Q.50)

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 kept at cathode and the layer that will be given is taken at anode. 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.

48. During electroplating of copper aqueous solution of which salt is used?
 (A) silver nitrate (B) zinc sulphate (C) copper sulphate (D) sodium chloride
49. During electroplating of copper, the role of the aqueous solution of the salt is
 (A) Insulator (B) electron suppliers (C) heat generator (D) electrolyte
50. The article by which we want electroplate is kept at
 (A) anode (B) cathode (C) either electrode (D) none of these

Mathematics

51. The angles P, Q, R and S of a quadrilateral are in the ratio 1 : 3 : 7 : 9. Then PQRS is a
 (A) parallelogram (B) trapezium with $\text{PQ} \parallel \text{RS}$ (C) trapezium with $\text{QR} \parallel \text{PS}$ (D) Kite
52. PQRS is a trapezium in which $\text{PQ} \parallel \text{SR}$ and $\angle P = 130^\circ$, $\angle Q = 110^\circ$. Then $\angle R$ is equal to :
 (A) 70° (B) 50° (C) 65° (D) 55°
53. The number of sides of a regular polygon whose each interior angle is of 135° is
 (A) 6 (B) 7 (C) 8 (D) 9

54. If a diagonal of a quadrilateral bisects both the angles, then it is a
 (A) kite (B) parallelogram (C) rhombus (D) rectangle
55. To construct a unique parallelogram, the minimum number of measurements required is
 (A) 2 (B) 3 (C) 4 (D) 5
56. A _____ is a 2D shape that can be folded to form a 3D solid.
 (A) net (B) get (C) jet (D) bet
57. A solid figure with only one vertex is a _____.
 (A) cube (B) cuboid (C) cylinder (D) Cone.
58. A triangular pyramid is also known as a
 (A) tetrahedron (B) parahedron (C) trihedron (D) None of these
59. A square pyramid has x faces and y edges and z vertices. Then the value of $x + y - 2z$ is
 (A) 1 (B) 2 (C) 3 (D) 4
60. For any polyhedron which one is true ?
 (A) $F + V \geq 8$ (B) $F + V < 8$ (C) $2 < F + V < 8$ (D) None of these
61. Both x and y are in direct proportional, then $\frac{1}{x}$ and $\frac{1}{y}$ are
 (A) in direct proportion (B) in direct proportion
 (C) neither in direct nor in inverse proportion (D) sometimes in direct sometimes in inverse proportion
62. Assuming land to be uniformly fertile, the area of land and the yeild on it vary
 (A) directly with each other
 (B) inversely with each other
 (C) neither directly nor inversely with each other
 (D) Sometimes directly sometimes inversely with each other
63. A tree of 20 m height casts a shadow 8 m long, what is the height of a tree that casts a shadow 10 m long
 (A) 20 m (B) 25 m (C) 15 m (D) none of these
64. If 5 men or 7 women can earn 5,250 per day, how much would 7 man and 13 women earn per day ?
 (A) ₹ 11,600 (B) ₹ 11,700 (C) ₹ 16,100 (D) ₹ 17,100
65. A train 400 m long is running at a speed of 72 km/hr. How much time does it take to cross a telegraph post?
 (A) 10 seconds (B) 15 seconds (C) 20 seconds (D) 5 seconds

Assertion and Reason:

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.

66. **Assertion (A):** If $a < \sqrt{85} < b$ and a and b are two consecutive positive integers then $(a + b) = 19$

Reason (R) : The difference of two consecutive positive integer is always 1

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

67. **Assertion (A) :** $(4^{2025} + 3^{2025})$ is always divisible by 7.

Reason (R) : $x^n + y^n$ is always divisible by $(x + y)$ if n is odd.

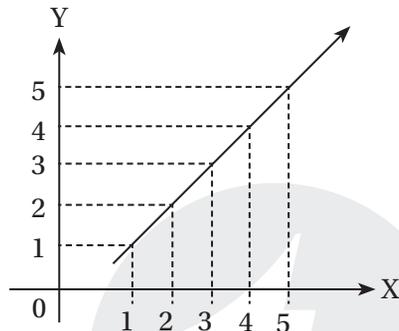
- (A) A (B) B (C) C (D) D

68. **Assertion (A) :** $|x - 2|$ has minimum value at $x = 2$

Reason (R) : $|x|$ has always minimum at $x = 2$.

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

69. **Assertion (A) :** From the graph we can say that x and y are directly related.

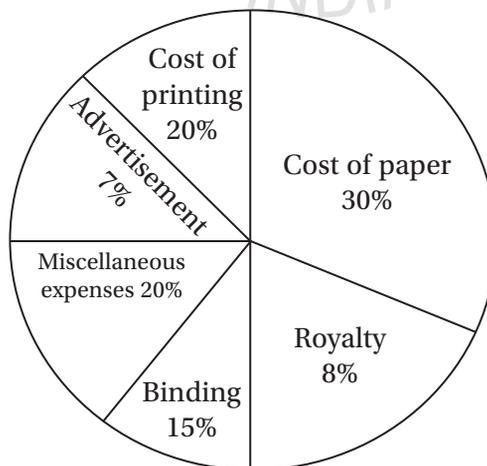


Reason (R) : If $x_1y_1 = x_2y_2 = x_3y_3 = \dots$. Then we say that x and y are inversely related.

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

Case Based Question (Q. 70-72)

Directions : In the following pie chart, percentage expenses on various items during the production of a book are given. Based upon the information given in the pie chart, answer the questions given below.



70. If the cost of paper is ₹ 150000, then the expense on advertisement is

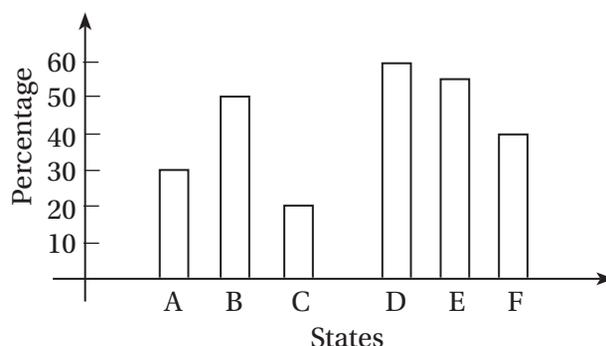
- (A) ₹ 35000 (B) ₹ 3500 (C) ₹ 40000 (D) ₹ 25000

71. The central angle corresponding to the cost of printing is

- (A) 60° (B) 72° (C) 45° (D) 102°

72. On which axis does the point (6, 0) lie ?
 (A) X-axis (B) Y-axis (C) Either X or Y (D) At origin

Case Based Question (Q. 73-75)



The following questions are based on the given histogram that shows the percentage of villages in the stages, which are not electrified.

73. Which of the following states has twice the percentage of villages electrified in comparison to state D ?
 (A) A (B) C (C) E (D) F
74. How many states have atleast 50% electrified villages ?
 (A) 1 (B) 2 (C) 3 (D) 5
75. How many states have 100% electrified village ?
 (A) 0 (B) 1 (C) 3 (D) none of these

Biology

76. The time taken for the foetus to develop completely in the mother's womb is called _____
 (A) gestation period (B) fertility period (C) adolescence (D) None of the above
77. Fertilisation results in the formation of a
 (A) zygote (B) morula (C) embryo (D) foetus
78. How many sperms are required to fertilise an ovum in humans?
 (A) One (B) Two (C) Three (D) Four
79. Which of the following is an endocrine gland?
 (A) Seminal vesicles (B) Prostate gland (C) Cowper's gland (D) None of the above
80. Platypus and Echidna are exceptional
 (A) amphibians (B) reptiles (C) birds (D) mammals
81. Where does implantation occur in humans?
 (A) Ovary (B) Oviduct (C) Uterus (D) Cervix
82. In binary fission, each Amoeba
 (A) produces two daughter amoebae (B) produces a bud
 (C) produces many daughter amoebae (D) undergoes metamorphosis
83. How many cells are present in a foetus?
 (A) One (B) Two (C) Three (D) Many

84. In which of these structures can you identify all the body parts, such as hands, legs, head and eyes?
 (A) Ovum (B) Zygote (C) Foetus (D) Embryo
85. The testes are connected to the vas deferens by:
 (A) Epididymis (B) Urethra (C) Penis (D) Ureter
86. Animals which produce small young ones are called:
 (A) Oviparous (B) Viviparous (C) Both (D) Silkmooths
87. Where does fusion of male and female gametes occur?
 (A) Fallopian tube (B) Ovary (C) Uterus (D) Urinogenital duct
88. After fertilisation in humans—
 (A) A haploid cell is formed (B) A diploid cell is formed
 (C) Menstruation resumes (D) Ovulation resumes
89. In an oviparous animal, like Platypus, fertilisation is
 (A) external (B) internal
 (C) depends on the weather (D) fertilisation does not occur
90. The number of eggs produced during internal fertilisation is :
 (A) more than that produced during external fertilisation
 (B) less than that produced during external fertilisation
 (C) equal to that produced during external fertilisation
 (D) depends on the environmental condition

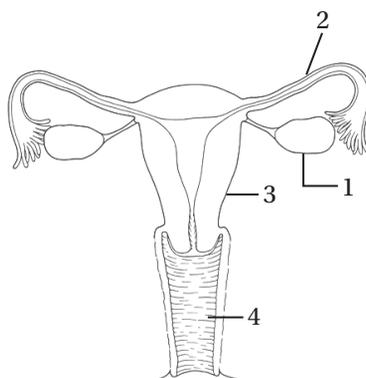
The questions 91 to 94 have two statements – Assertion (A) and Reason (R). Of the two statements, mark the correct answer from the options given below:

- 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:** In asexual reproduction, only one parent is involved.
Reason: In asexual reproduction, only one off spring is produced at a time.
 (A) A (B) B (C) C (D) D
92. **Assertion:** In humans, the male gamete is the motile gamete.
Reason: The male gamete is produced from the testis.
 (A) A (B) B (C) C (D) D
93. **Assertion:** The testes lie outside the abdominal cavity in sacs of loose skin.
Reason: The scrotal sacs regulate the temperature of the testes.
 (A) A (B) B (C) C (D) D
94. **Assertion:** Birds are not viviparous.
Reason: Birds lay eggs.
 (A) A (B) B (C) C (D) D

Study the given diagram and answer the following questions (Q. 95 – Q. 97):

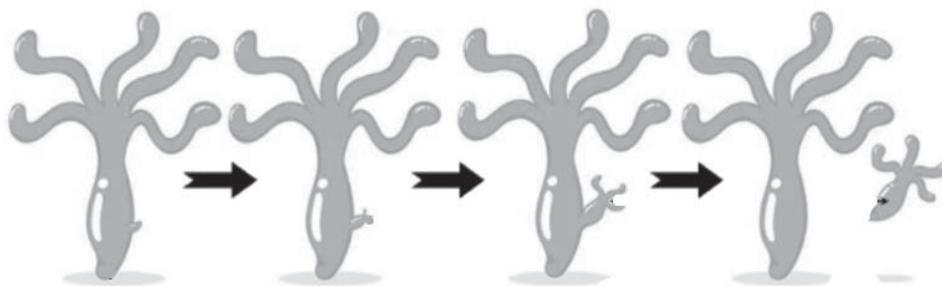
Study the diagram given below and answer the following questions:



95. Select the correct labelling of the parts 1, 2, 3 and 4.
- (A) Oviduct, Ovary, Uterus and Vagina, respectively (B) Ovary, Oviduct, Uterus and Vagina, respectively
 (C) Uterus, Ovary, Oviduct and Vagina, respectively (D) Vagina, Uterus, Ovary and Oviduct, respectively
96. From which part is the female gamete produced?
- (A) Part 1 (B) Part 2 (C) Part 3 (D) Part 4
97. Which organ sheds and regenerates its lining every month in case there is no fertilisation?
- (A) Part 1 (B) Part 2 (C) Part 3 (D) Part 4

Case based question (98-100)

Picture of budding in Hydra without labelling to be taken from internet



98. The offsprings produced by the above mode of reproduction are:
- (A) Considerably different from their parents (B) Completely different from their parents
 (C) Exact copies of their parents (D) Could be any of the three options given above
99. Select the correct statement:
- (A) The young offspring resembles its parent
 (B) One offspring is produced at a time during this process
 (C) The young and mature offspring detaches from the parent and starts its independent existence
 (D) All of the above
100. Compare the above process with binary fission in Amoeba and select the correct statement.
- (A) In the above process, the parent organism continues to survive after reproduction, unlike in Amoeba
 (B) In both the processes, the offsprings are not able to divide any further
 (C) In both the processes, the offsprings produce gametes during sexual reproduction
 (D) In the above process, the parent organism dies after reproduction, unlike in binary fission