

MHT CET 2025 Memory Based Question Paper PDF (April 13, 2025) (Shift 1)

1. Which acid is responsible for enlargement of ovary into fruit?
 - (1) Auxin
 - (2) Cytokinin
 - (3) Gibberellin
 - (4) Absciscic acid
2. What is the period of mammals called?
(Geological time scale)
 - (1) Mesozoic Era
 - (2) Cenozoic Era
 - (3) Paleozoic Era
 - (4) Precambrian Era
3. The rete testis arises from which of the following?
 - (1) Epididymis
 - (2) Seminiferous tubules
 - (3) Vas deferens
 - (4) Urethra
4. Which of the following is required for the growth of both plants and seeds?
 - (1) Copper
 - (2) Zinc
 - (3) Chlorine
 - (4) Iron
5. What is the role of fructose in human reproduction?
 - (1) Provides energy to sperm cells
 - (2) Protects sperm DNA from damage
 - (3) Regulates hormone levels in the female reproductive system
 - (4) Stimulates egg release from the ovary

6. Which of the following hormone is antitranspirant?
- (1) Auxin
 - (2) Absciscic acid
 - (3) Cytokinin
 - (4) Ethylene
7. According to Chargaff's Rule, in a DNA molecule, the amount of adenine (A) is always equal to the amount of _____.
- (1) Cytosine (C)
 - (2) Guanine (G)
 - (3) Thymine (T)
 - (4) Uracil (U)
8. What is the artificial method of vegetative propagation?
- (1) Seed formation
 - (2) Grafting
 - (3) Pollination
 - (4) Fertilization
9. In developed ovary, how many primordial cells are present?
- (1) 1-2 million
 - (2) 500,000
 - (3) 10,000
 - (4) 50,000
10. Function of vegetative and generative cell.
- (1) Vegetative cell forms pollen tube; generative cell forms two male gametes
 - (2) Both cells form pollen tubes
 - (3) Both cells form male gametes
 - (4) Generative cell forms pollen tube; vegetative cell forms male gametes
11. Adventive embryony is seen in which plants?
- (1) Pea and Mustard

- (2) Citrus and Mango
- (3) Rice and Wheat
- (4) Sunflower and Marigold

12. Which of the following is excretory material in birds?

- (1) Ammonia
- (2) Urea
- (3) Uric acid
- (4) Creatinine

13. In the Miller-Urey experiment, what was the ratio of gases used to simulate primitive Earth's atmosphere?

- (1) 2:1:1 (H_2 : NH_3 : CH_4)
- (2) 1:1:1 (CH_4 : NH_3 : H_2)
- (3) 1:1:2 (CH_4 : NH_3 : H_2)
- (4) 1:2:1 (NH_3 : H_2 : CH_4)

14. In oogenesis after meiosis I, which of the following is formed?

- (1) Ovum and polar body
- (2) Secondary oocyte and first polar body
- (3) Two polar bodies
- (4) Primary oocyte

15. A projectile is fired with an initial velocity of 20 m/s at an angle of 30° with the horizontal. Calculate the maximum height reached by the projectile.

- (1) 10 m
- (2) 15 m
- (3) 20 m
- (4) 25 m

16. A force of 10 N is applied to move a body of mass 5 kg over a distance of 3 meters. Find the work done by the force.

- (1) 20 J
- (2) 30 J

- (3) 40 J
(4) 50 J
- 17.** A 5 kg block is placed on a horizontal surface. A force of 10 N is applied to the block. The coefficient of friction between the block and the surface is 0.2. Find the acceleration of the block.
- (1) 0.6 m/s^2
(2) 1.0 m/s^2
(3) 2.0 m/s^2
(4) 1.5 m/s^2
- 18.** A body of mass 10 kg is moving with a speed of 4 m/s. It is brought to rest by a force in 5 seconds. Calculate the work done by the force.
- (1) 40 J
(2) 80 J
(3) 60 J
(4) 100 J
- 19.** The gravitational potential energy of a 2 kg object at a height of 5 m above the surface of the Earth is?
- (1) 100 J
(2) 150 J
(3) 50 J
(4) 25 J
- 20.** A current of 2 A flows through a conductor with a resistance of 5Ω . Calculate the potential difference across the conductor.
- (1) 10 V
(2) 5 V
(3) 2 V
(4) 20 V
- 21.** A light ray is passing from air (refractive index $\mu_1 = 1.0$) into water (refractive index $\mu_2 = 1.33$). If the angle of incidence in air is 30° , what is the angle of refraction in water?
- (1) 22.5°

- (2) 19.5°
(3) 25.0°
(4) 20.0°
- 22.** A gas is compressed from an initial volume of 10 L to 5 L. The pressure during the compression is constant at 2 atm. Calculate the work done on the gas.
- (1) 10 L·atm
(2) 20 L·atm
(3) 5 L·atm
(4) 15 L·atm
- 23.** The rate constant of a first-order reaction is $2 \times 10^{-3} \text{ s}^{-1}$. What is the half-life of the reaction?
- (1) 0.347 s
(2) 1.4 s
(3) 0.693 s
(4) 2.0 s
- 24.** What is the pH of a 0.001 M NaOH solution?
- (1) 11
(2) 12
(3) 13
(4) 14
- 25.** What is the standard electrode potential for the reduction half-reaction $\text{Cu}^{2+} + 2e^{-} \rightarrow \text{Cu}$?
- (1) +0.34 V
(2) -0.34 V
(3) +0.72 V
(4) -0.72 V
- 26.** The enthalpy of vaporization of water is 40.79 kJ/mol. How much heat is required to vaporize 2 moles of water at its boiling point?
- (1) 40.79 kJ
(2) 81.58 kJ
(3) 20.39 kJ

(4) 10.39 kJ

27. Which of the following compounds exhibits ionic bonding?

- (1) H_2O
- (2) NaCl
- (3) CO_2
- (4) CH_4

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