

## MHT CET 2024 PCB April 22 Shift 2 Answer Key

In a family, a man with hemophilia, a genetic disorder where blood doesn't clot properly, marries a woman who is a carrier of the gene but does not express the disorder. What is the probability that their son will have hemophilia ?

- A 0%
- B 25%
- C 50%
- D 75%

1.

**Answer: C**

Which of the following is a characteristic symptom of Down syndrome ?

2.

- A Abnormal growth of hair
- B Heart murmurs
- C Skin rash
- D Eye color changes

**Answer:**

During puberty, how many primary follicles are typically present in the ovaries of a female ?

- A** 2 million
- B** 1 million
- C** Thousands
- D** None

3.

**Answer: C**

The causative agent of malaria is \_\_\_\_\_.

- A** *Plasmodium falciparum*
- B** *Anopheles mosquito*
- C** *Trypanosoma brucei*
- D** *Entamoeba histolytica*

4.

**Answer: A**

**Which virus is responsible for causing AIDS ?**

- A** Hepatitis B virus
- B** Human papillomavirus (HPV)
- C** Human immunodeficiency virus (HIV)
- D** Influenza virus

5.

**Answer: C**

**Which disease is primarily spread by female Anopheles mosquitoes ?**

- A** Dengue fever
- B** Malaria
- C** Zika virus
- D** Chikungunya

6.

**Answer: B**

What is genomics ?

- A** The study of genes within an organism
- B** The study of heredity and variation in organisms
- C** The study of the structure and function of the genome
- D** The study of the interactions between genes and the environment

7.

Answer: A

Molecular scissor of genetic engineering ?

- A** DNA Ligase
- B** Ligase
- C** Restriction endonuclease
- D** RNA Polymerase

8.

Answer: C

\_\_\_\_\_ is also called terror of Bengal.

- A** Pistia
- B** Eichhornia
- C** Water hyacinth
- D** Both (b) and (c)

9.

**Answer: D**

Which amino acids are histones rich in, facilitating their interaction with DNA ?

10.

- A** Glycine and proline
- B** Lysine and arginine
- C** Alanine and serine
- D** Aspartic acid and glutamic acid

**Answer: B**

Leaf cutting is done successfully in which of the following plants \_\_\_\_\_.

11.

- A rose
- B blackberry
- C sansvieria
- D Bougainvillea

Answer: C

How many ATP molecules are needed as an initial investment in the glycolytic cycle (normal glycolysis) ?

12.

- A 1
- B 2
- C 3
- D 4

Answer: B



Total genetic content of an organism is called \_\_\_\_\_.

- A Gene pool
- B Genetic drift
- C Gene frequency
- D Gene mutation

13.

Answer: A

Theca interna releases which hormone \_\_\_\_\_.

- A Progesterone
- B Estrogen
- C LH
- D FSH

14.

Answer: B

Which of the following is an example of an outbreeding device in plants ?

- A Cleistogamy
- B Autogamy
- C Xenogamy
- D Geitonogamy

15.

Answer: C

Which of the following techniques is commonly used to introduce herbicide resistance into plants ?

- A RNA interference
- B CRISPR-Cas9 gene editing
- C Polymerase chain reaction (PCR)
- D Agrobacterium-mediated gene transfer

16.

Answer: D



Which microorganism is use in yoghurt production \_\_\_\_\_,

- A** streptococcus thermophilus
- B** ststreptococcus penicillium
- C** penicillium roqueforti
- D** aspergillus niger

17.

**Answer:** A

If  $p$  is the magnitude of linear momentum of a particle executing a uniform circular motion then the ratio of centripetal force acting on the particle to its linear momentum is given by \_\_\_\_\_.

18.

**Answer:**  $v/r$

An e.m.f of 5 volt is produced by a self inductance when the current changes at a steady rate from 3A to 2A in 1 millisecond the value of self inductance is \_\_\_\_\_.

19.

**Answer:**  $L = 5 \times 10^{-3}$

Two monkeys of mass 10 kg and 8 kg are moving along a vertical light rope the former climbing up with an acceleration of  $2 \text{ m/sec}^2$  while the latter coming down with a uniform velocity of  $2 \text{ m/sec}$  find the tension in the rope at the fixed support

20.

**Answer:** 184N

"Water is flowing through a horizontal pipe in stream line flow at the narrowest part of the pipe?"

- A velocity is maximum and pressure is minimum
- B pressure is maximum and velocity is minimum
- C both pressure and velocity are minimum
- D both pressure and velocity are maximum"

21.

Answer: A

"The height from earth's surface at which acceleration due to gravity becomes  $g/2$  where  $g$  is acceleration due to gravity on the surface of earth and  $R$  is radius of earth?"

- A  $\sqrt{2}R$
- B  $R$
- C  $R/\sqrt{2}$
- D  $2R$

22.

Answer: B

How many steps are there in the process of glycolysis, the metabolic pathway that converts glucose into pyruvate ?

- A** 6
- B** 8
- C** 10
- D** 12

23.

**Answer: C**

Correct sequence in water absorption by root hairs.

- A** Imbibition, diffusion, osmosis
- B** Osmosis, imbibition, diffusion
- C** Diffusion, imbibition, osmosis
- D** Osmosis, diffusion, imbibition

24.

**Answer: A**

Anneling process of PCR is performed at \_\_\_\_\_ temperature

- A** 90-98°C
- B** 40-60°C
- C** 70-75°C
- D** 20-25°C

25.

**Answer: B**

Which of the following flowers is most likely to be pollinated by birds ?

- A** A flower with a long, tubular shape and bright red color
- B** A flower with a strong fragrance and white petals
- C** A flower that opens only at night and emits a strong scent
- D** A flower with small, inconspicuous petals and a dull color

26.

**Answer: A**

Bond present between two nucleotides on single strand of DNA is \_\_\_\_\_

- A Phosphodiester bond
- B Hydrogen bond
- C Glycosidic bond
- D Covalent bond

27.

Answer: A

