

MHT CET 2024 PCB April 22 Shift 2 Question Paper

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

The causative agent of malaria is _____.

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

4.

Which virus is responsible for causing AIDS ?

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

5.

Which disease is primarily spread by female Anopheles mosquitoes ?

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

6.

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.

Molecular scissor of genetic engineering ?

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

8.

_____ is also called **terror of Bengal**.

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

9.

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

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

11. Leaf cutting is done successfully in which of the following plants _____.

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

12.

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

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

13.

Total genetic content of an organism is called _____.

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

Theca interna releases which hormone _____.

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

14.

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

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

15.

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.

Which microorganism is use in yoghurt production _____,

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

17.

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.

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.

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

20.

"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.

"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.

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.

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.

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.

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.

Bond present between two nucleotides on single strand of DNA is _____

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

27.