

MHT CET 2024 Question Paper (April 22 - Shift 2)

Ques 1. 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%**

Ans: C

Ques 2. Which of the following is a characteristic symptom of Down syndrome?

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

Solu. B

Ques 3. 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**

Ans: C

Ques 4. The causative agent of malaria is

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

Ans: A

Ques 5. Which virus is responsible for causing AIDS ?

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

Ans: C

Ques 6. Which disease is primarily spread by female Anopheles mosquitoes?

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

Ans: B

Ques 7. 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 environn**

Ans: A

Ques 8. Molecular scissor of genetic engineering?

A DNA Ligase

B Ligase

C Restriction endonuclease

D RNA Polymerase

Ans: C

Ques 9. _____ is also called terror of Bengal.

A Pistia

B Eichhornia

C Water hyacinth

D Both (b) and (C)

Ans: D

Ques 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

Ans: B

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

A rose

B blackberry

C sansvieria

D Bougainvillea

Ans: C

Ques 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**

Ans: B

Ques 13. Total genetic content of an organism is called

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

Ans: A

Ques 14. Theca interna releases which hormone

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

Ans: B

Ques 15. Which of the following is an example of an outbreeding device in plants?

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

Ans: C

Ques 16. 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**

Ans: D

Ques 17. Which microorganism is use in yoghurt production

- A streptococcus thermophilus**
- B ststreptococcus penicillium**
- C penicillium roqueforti**
- Daspergillus niger**

Ans: A

Ques 18. 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

Ans: v/r

Ques 19. 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

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

Ques 20. 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 square while the latter coming down with a uniform velocity of 2 m/sec square find the tension in the rope at the fixed support

Ans: 184N

Ques 21. "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"**

Ans: A

Ques 22. "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 $2R$**

Ans: B

Ques 23. 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**

Ans: C

Ques 24. Correct sequence in water absorption by root hairs.

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

Ans: A

Ques 25. Annealing process of PCR is performed at ____ temperature

A 90-98°C

B 40-60°C

C 70-75°C

D 20-25°C

Ans: B

Ques 26. 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

Ans: A

Ques 27. Bond present between two nucleotides on single strand of DNA is

A Phosphodiester bond

B Hydrogen bond

C Glycosidic bond

D Covalent bond

Ans: A
