

MHT CET 2024 PCB April 23 Shift 2 Question Paper

1. Find the ratio of K.E. and P.E. when particle performing SHM when it is at $(1/n)$ times of its amplitude from mean position.

A $n^2/2$

B $n^2 + 1$

C $n^2 - 1$

D n^2

2. Two sphere are given that $r = 10$ cm and distance between them is 20 cm and axis is passing between the middle of the distance what is the moment of inertia?

3. Safety speed for vehicle moving along curved horizontal banked road.

In hydrosere succession, which stage comes just before the sedge meadow stage ?

4.

- A** Rooted submerged stage
- B** Phytoplankton stage
- C** Reed swamp stage
- D** Climax stage



5. The maximum kinetic energy of the photoelectrons varies.

6. If L is the inductance and R is the resistance then the unit of L/R is:

7. A lift weighing 250 kg is to be lifted up at a constant velocity of 0.20 m what would be the minimum horse power of the motor to be used.

Which of the following causes typhoid fever ?

- A *Salmonella typhi*
- B Mosquito
- C *Plasmodium*
- D Nicotine

8.

9.

Which scientists are credited with proposing the transpiration pull theory, also known as the cohesion-tension theory?

- A** Charles Darwin and Francis Darwin
- B** Stephen Hales
- C** Henry Dixon and John Joly
- D** Ernst Münch

10.

Between which among the following, the relationship is not an example of _____?

- A** Orchid and the tree on which it grows
- B** Cattle egret and grazing cattle
- C** Sea anemone and clown fish
- D** Female wasp and fig species

11.

How do most arthropods circulate nutrients and gases throughout their bodies ?

- A** Open circulatory system
- B** Closed circulatory system
- C** No circulatory system
- D** Diffusion through body tissues



What is the movement of cytoplasm within a cell called ?

- A** Endocytosis
- B** Exocytosis
- C** Cytokinesis
- D** Cytoplasmic streaming

12.

How many times does oxidation occur in the Krebs cycle of cellular respiration ?

13.

- A** Once
- B** Twice
- C** Three times
- D** Four times

14.

During which phase of its life cycle does the Plasmodium parasite enter the human body when a female Anopheles mosquito bites a human ?

- A** Sporozoite phase
- B** Merozoite phase
- C** Gametocyte phase
- D** Trophozoite phase



Which of the following structures is responsible for the production of sperm in the male reproductive system ?

- A** Prostate gland
- B** Seminal vesicles
- C** Epididymis
- D** Testes

15.

Joint forest management concept was introduced in India during _____.

16.

- A** 1960s
- B** 1970s
- C** 1980s
- D** 1990s

The electrostatic energy stored in 1 litre volume of air when it is placed in uniform electric field of intensity 10^3 V/m is:

17.

A satellite has kinetic energy K , potential energy V and total energy E which of the following statements is true

18.

Which of the following best describes sympatric speciation ?

- A** Speciation that occurs due to geographic isolation
- B** Speciation that occurs in the same geographic region without physical separation
- C** Speciation that occurs due to migration to a new habitat
- D** Speciation that occurs through gradual accumulation of small changes over time

19.

