

## Sem V Paper I Mock Test

Question 1). A die is rolled twice. What is the probability of getting a sum equal to 9

- A).2/3
- B).2/9
- C).1/9
- D).1/3

Correct Answer-(C)

Question 2). Which of the following cannot be the probability of an event?

- A).3/2
- B).1/8
- C).3/5
- D).0.3

Correct Answer-(A)

Question 3). All substances have minimum internal energy at

- A).absolute zero
- B).0° C
- C).0o F
- D).100 K

Correct Answer-(A)

Question 4). How many two digit numbers can be generated using the digits 1,2,3,4 without repeating any digit?

- A).10
- B).12
- C).4
- D).16

Correct Answer-(B)

Question 5). A dice is thrown. What is the probability that the number shown in the dice is divisible by 3

- A).1/3
- B).1/6
- C).1/2
- D).1/4

Correct Answer-(A)

Question 6). What is the probability of getting a number less than 4 when a die is rolled?

- A).1/2
- B).1/4
- C).1/3
- D).3/4

Correct Answer-(A)

Question 7). In how many ways can 7 boys be seated in a circular order?

- A).120
- B).720
- C).1040
- D).60

Correct Answer-(B)

Question 8). The energy that is transferred from one body to the other in thermal contact with each other as a result of the difference of temperature between them is called

- A).stress
- B).heat
- C).pressure
- D).temperature

Correct Answer-(B)

Question 9). One ball is picked up randomly from a bag containing 8 yellow, 7 blue and 6 black balls. What is the probability that it is neither yellow nor black?

- A).1/2
- B).1/4
- C).1/3
- D).3/4

Question 10). Three coins are tossed simultaneously. The probability of getting all heads is

- A).1
- B).1/2
- C).1/4
- D).1/8

Correct Answer-(D)

Question 11). The total events to throw three dice simultaneously is

- A).6
- B).18
- C).81
- D).216

Correct Answer-(D)

Question 12). If a number is chosen at random from the set {1, 2, 3, ..., 100}, then the probability that the chosen number is a perfect cube is -.

- A).1/25
- B).1/8
- C).3/5
- D).1/10

Correct Answer-(A)

Question 13). Energy required per unit mass of substance to raise temperature of that substance by 1 K is called

- A).enthalpy
- B).internal energy
- C).specific heat capacity
- D).temperature

Correct Answer-(C)

Question 14). Solve  $\partial u/\partial x = 6 \partial u/\partial t + u$  using the method of separation of variables if  $u(x,0) = 10 e^x$ .

- A).  $10 e^{-x} e^{-t/3}$
- B).  $10 e^x e^{-t/3}$
- C).  $10 e^{x/3} e^{-t}$
- D).  $10 e^{-x/3} e^{-t}$

Correct Answer-(A)

Question 15). There are 10 prizes and 25 blanks in a lottery. If John has taken a lottery, what is the probability for him to get a prize?

- A). 4/7
- B). 3/7
- C). 1/7
- D). 2/7

Correct Answer-(D)

Question 16). When using the variable separable method to solve a partial differential equation, then the function can be written as the product of functions depending only on \_\_\_\_\_ variable

- A). four
- B). two
- C). three
- D). one

Correct Answer-(D)

Question 17). What is the probability of drawing a "Queen" from a deck of 52 cards

- A). 1/13
- B). 1/2
- C). 1/3
- D). 1/6

Correct Answer-(A)

Question 18). A differential equation is considered to be ordinary if it has

- A).one dependent variable
- B).more than one dependent variable
- C).one independent variable
- D).more than one independent variable

Correct Answer-(C)

Question 19). Tickets numbered 1 to 20 are mixed up and then a ticket is drawn at random. What is the probability that the ticket drawn has a number which is a multiple of 3 or 5

- A).1/5
- B).1/20
- C).1/4
- D).9/20

Correct Answer-(D)

Question 20). If there is no transfer of energy between two objects then their temperatures are

- A).same
- B).different
- C).zero
- D).infinite

Correct Answer-(A)