

VIVEK TUTORIALS

Practice Test

Std: SSC (E.M) Date : 24/Apr/2019

Subject: Mathematics I Probability

Time: 30Min Max Marks: 20

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Q.1(A) Choose the correct alternative:

- (1) A bag has x green balls and 8 blue balls. If the probability of getting a blue ball is 1/3. How many green balls are in bag?
 - (a) 5 (b) 8 (c) 3 (d) 16
- (2) What is the probability of getting even numbers on both faces when a pair of dice is rolled on the table?
 - (a) $\frac{1}{2}$ (b) $\frac{1}{18}$ (c) $\frac{1}{4}$ (d) $\frac{3}{4}$
- (3) The probability of a 2 digit number less than 60 and divisible by 5 is
 (a) 10/49 (b) 1/5 (c) 1/6 (d) 9/50
- (4) In a throw of dice what is the probability of getting a prime number on upper face?
 (a) 1/3 (b) ¹/₂ (c) 2/5 (d) 2/3

(B) Solve the following:

- (1) How many possibilities are there in each of the following: One number from 10 to 20 is written on each card. Select one card randomly.
- (2) For each of the following experiments write sample space 'S' and number of sample points n(S).(1) One coin and one die are thrown simultaneously.
 - (2) Two digit numbers are formed using digits 2, 3 and 5 without repeating a digits.
- (3) Two coins are tossed simultaneously. Write the sample space (S) and number of sample points n(S). Also write the following events in the set form and write the number of sample points in each event.(i) Condition for event A : to get at least one tail.
 - (ii) Condition for event B : to get only one head.
 - (iii) Condition for event C : to get at most one tail.
 - (iv) Condition for event D : to get no head.

Q.2(A) Complete the following activities:

(1) If two coins are tossed, find the probability of the following events.

(1) Getting at least one head. (2) Getting no head.

Experiment: Tossing of two coins.

Let 'S' be the Sample Space

 $S = \{HH, HT, TH, TT\}$

n (s) =

(1) Let Event A: getting at least 1 head

$$A = \{HT, TH,]$$

∴ Probability of getting at least 1 head is P (A)

$$P(A) = \frac{1}{n(S)}$$
$$P(A) = \frac{1}{n(S)}$$

(2) Let Event B: getting no head

$$B = \{TT\}$$

$$n(B) = 1$$

: Probability of getting no head is

$$P(B) = \frac{1}{n(S)}$$
$$P(B) = \frac{1}{4}$$

- (2) Write sample space 'S' and number of sample point n(S) for each of the following experiments. Also write events A, B, C in the set form and write n(A), n(B), n(C): Two dice are rolled simultaneously,
 - Event A : The sum of the digits on upper faces is a multiple of 6.
 - Event B : The sum of the digits on the upper faces is minimum 10.

Event C : The same digit on both the upper faces.



Experiment is two dice are rolled simultaneously.

(1,1)(1,2)(1,3)(1,4)(1,5)(1,6) $S = \{(2,1), (2,2), (2,3), (2,4), (2,5), (2,6)\}$ (3,1)(3,2)(3,3)(3,4)(3,5)(3,6)(4,1)(4,2)(4,3)(4,4)(4,5)(4,6)(5,1) (5,2) (5,3) (5,4) (5,5) (5,6) (6,1) (6,2) (6,3) (6,4) (6,5) (6,6) n(S) =Event A = The sum of digits on upper faces is multiple of 6. $A = \{(1,5), (2,4), (3,3), (4,2), (5,1), (6,6)\}$ n(A) =Event B = The sum of the digits on the upper faces is minimum $B = \{(4,6), (5,5), (5,6), (6,4), (6,6)\}$ n(B) =Event $\overrightarrow{C} \rightarrow$ The same digit on both the upper faces.

$$C = \{(1,1), (2,2), (3,3), (4,4), (5,5), (6,6)\}$$

n(C) =

(B) Solve the following:

- (1) A Sanitation committee of 2 members is to be formed from 3 boys and 2 girls. Write sample space 'S' and number of sample points n(S). Also write the following events in set form and number of sample points in the event.
 - (i) Condition for event A : at least one girl must be a member of the committee.
 - (ii) Condition for event B : Committee must be of one boy and one girl.
 - (iii) Condition for event C : Committee must be of boys only.
 - (iv) Condition for event D : At the most one girl should be a member of the committee.
- (2) Out of 200 students from a school, 135 like Kabbaddi and the remaining students do not like the game. If one student is selected at random from all the students, find the probability that the student selected doesn't like Kabbaddi.

----- All the Best ------