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KCET ONLINE TEST-25, MAY-2020  **MATHEMATICS**  **TIME: 45Mins MARKS: 30**

**TOPIC**: **PROBABILITY, RANDOM VARIABLES & STATISTICS. DATE: 19/05/2020**

1. **The mean of *n* items is . If the first term is increased by 1, second by 2 and so on, then new mean is**

(a)  (b) 

(c)  (d) None of these

1. **The mean of the values 0, 1, 2,......,*n* having corresponding weight  respectively is**

(a)  (b) 

(c)  (d) 

1. **Mean of 100 observations is 45. It was later found that two observations 19 and 31 were incorrectly recorded as 91 and 13. The correct mean is**

(a) 44.0 (b) 44.46

(c) 45.00 (d) 45.54

1. **The average of *n* numbers  is *M*. If  is replaced by , then new average is**

(a)  (b)

(c)  (d) 

1. **The following data gives the distribution of height of students**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Height**  **(in *cm*)** | **160** | **150** | **152** | **161** | **156** | **154** | **155** |
| **Number of students** | **12** | **8** | **4** | **4** | **3** | **3** | **7** |

**The median of the distribution is**

(a) 154 (b) 155

(c) 160 (d) 161

1. **The mean and S.D. of the marks of 200 candidates were found to be 40 and 15 respectively. Later, it was discovered that a score of 40 was wrongly read as 50. The correct mean and S.D. respectively are**

(a) 14.98, 39.95 (b) 39.95, 14.98

(c) 39.95, 224.5 (d) None of these

1. **Let *r* be the range and  be the S.D. of a set of observations , then**

(a)  (b) 

(c)  (d) None of these

1. **In a series of 2*n* observations, half of them equal to *a* and remaining half equal to –*a.* If the standard deviation of the observations is 2, then |*a*| equals**

(a)  (b)  (c) 2 (d) 

1. **The S.D. of a variate *x* is *σ*. The S.D. of the variate  where *a*, *b*, *c* are constant, is**

(a)  (b)  (c)  (d) None of these

1. **A coin is tossed  times, where  The probability of getting at least *m* consecutive heads is**

(a)  (b) 

(c)  (d) None of these

1. **An anti-aircraft gun take a maximum of four shots at an enemy plane moving away from it. The probability of hitting the plane at the first, second, third and fourth shot are 0.4, 0.3, 0.2 and 0.1 respectively. The probability that the gun hits the plane is**

(a) 0.25 (b) 0.21

(c) 0.16 (d) 0.6976

1. **A bag contains *a* white and *b* black balls. Two players *A* and *B* alternately draw a ball from the bag replacing the ball each time after the draw till one of them draws a white ball and wins the game. *A* begins the game. If the probability of *A* winning the game is three times that of *B*, then the ratio *a* : *b* is**

(a) 1 : 1 (b) 1 : 2

(c) 2 : 1 (d) None of these

1. **If  and  are the probabilities of three mutually exclusive events, then the set of all values of *p* is**

(a)  (b) 

(c)  (d) 

1. **If *n* positive integers are taken at random and multiplied together, the probability that the last digit of the product is 2, 4, 6 or 8, is**

(a)  (b) 

(c)  (d) None of these

1. **An unbiased coin is tossed. If the result is a head, a pair of unbiased dice is rolled and the number obtained by adding the numbers on the two faces is noted. If the result is a tail, a card from a well shuffled pack of eleven cards numbered 2, 3, 4,.......,12 is picked and the number on the card is noted. The probability that the noted number is either 7 or 8, is**

(a) 0.24 (b) 0.244

(c) 0.024 (d) None of these

1. **If   and  then**

(a)  (b) 

(c)  (d) None of these

1. **Odds 8 to 5 against a person who is 40 years old living till he is 70 and 4 to 3 against another person now 50 till he will be living 80. Probability that one of them will be alive next 30 years**

(a)  (b) 

(c)  (d) 

1. **A rifle man is firing at a distant target and has only 10% chance of hitting it. The minimum number of rounds he must fire in order to have 50% chance of hitting it at least once is**

(a) 7 (b) 8

(c) 9 (d) 6

1. **If the integers *m* and *n* are chosen at random between 1 and 100, then the probability that a number of the form  is divisible by 5 equals**

(a)  (b)  (c)  (d) 

1. **There are four machines and it is known that exactly two of them are faulty. They are tested, one by one, is a random order till both the faulty machines are identified. Then the probability that only two tests are needed is**

(a)  (b)  (c)  (d) 

1. **Two persons *A* and *B* take turns in throwing a pair of dice. The first person to through 9 from both dice will be avoided the prize. If *A* throws first then the probability that *B* wins the game is**

(a)  (b) 

(c)  (d) 

1. **In four schools the percentage of girls students is 12, 20, 13, 17 respectively. From a school selected at random, one student is picked up at random and it is found that the student is a girl. The probability that the school selected is is**

(a)  (b) 

(c)  (d) 

1. **Probability that a student will succeed in IIT entrance test is 0.2 and that he will succeed in Roorkee entrance test is 0.5. If the probability that he will be successful at both the places is 0.3, then the probability that he does not succeed at both the places is**

(a) 0.4 (b) 0.3

(c) 0.2 (d) 0.6

1. **Six boys and six girls sit in a row. What is the probability that the boys and girls sit alternatively**

(a)  (b) 

(c)  (d) None of these

1. **8 coins are tossed simultaneously. The probability of getting at least 6 heads is**

(a)  (b) 

(c)  (d) 

1. **In a box containing 100 eggs, 10 eggs are rotten. The probability that out of a sample of 5 eggs none is rotten if the sampling is with replacement is**

(a)  (b) 

(c)  (d) 

1. **If the probability that a student is not a swimmer is 1/5, then the probability that out of 5 students one is swimmer is**

(a)  (b) 

(c)  (d) None of these

1. **In a box of 10 electric bulbs, two are defective. Two bulbs are selected at random one after the other from the box. The first bulb after selection being put back in the box before making the second selection. The probability that both the bulbs are without defect is**

(a)  (b) 

(c)  (d) 

1. **A fair coin is tossed *n* times. If the probability that head occurs 6 times is equal to the probability that head occurs 8 times, then *n* is equal to**

(a) 15 (b) 14

(c) 12 (d) 7

1. **If three dice are thrown together, then the probability of getting 5 on at least one of them is**

(a)  (b) 

(c)  (d) 