**Enrollment No. …………………………**

**MID SEMESTER EXAMINATION-2 (FEBRUARY-2021)**

**Fourth Semester – B.TECH**

**Statistics – II Paper code: BTCS04CFB2**

**Time Allowed: One Hour Maximum Marks: 15**

**SECTION – 01**

**Long Answer Type Question (Attempt any 1 question among 2 questions) [01x07=07]**

**Q1.**  A population consists of the numbers 1,3,5,7 and 9

1. Enumerate all possible sample of size two which can be drawn from population with replacement.
2. Find the mean for the above sampling distribution.
3. Find the standard error of the sampling distribution thus formed.

**Q2.** For the population of farm workers in Indore, suppose that weekly income has a distribution that is skewed right with a mean of ₹ 500 and a standard deviation of ₹ 160. A survey of 100 farm workers is taken, including information on their weekly income.

1. What are the mean and standard error of the sampling distribution of x?
2. What is the probability that the mean weekly income of these 100 workers is less than ₹ 448?
3. What is the probability that the mean weekly income of these 100 workers is between ₹ 480 and ₹520?

**SECTION – 02**

**Short Answer Type Question (Attempt any 1 question among 2 questions) [01x03=03]**

**Q3.** A random sample of 400 farms in certain year revealed that the average yield per acre of sugarcane was 925 kgs with a standard deviation of 88 kgs. Determine the 95% confidence interval for the population mean.

**Q4.** Distinguish between:

1. parameter and statistic.
2. Sampling distribution and probability distribution.
3. Standard deviation and standard error.

**SECTION – 03**

**Short Notes Type Question (Compulsory) [01x02=02]**

**Q5.** In a sample of 600 men from certain city, 450 are found smokers. In another sample of 900 men from another city, 450 are smokers. Do the data indicate that the cities are significantly different with respect to smoking among men.

**SECTION – 04**

**Very Short Answer Type Question (Compulsory) [03x01=03]**

**Q6.** Mean of the sample means is equal to population mean. True or False.

**Q7**. A measurement from a population has population mean 6 and standard deviation 2. What are the mean and standard error of x when n = 100?

**Q8.** The sampling distribution of proportion would be approximately normal when n is greater than or equal to…………. **Fill in the blank.**

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