**Enrollment No. …………………………**

**MID SEMESTER EXAMINATION-1 (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**. In a sample of 1000 cases, the mean of the certain test is 14 and the standard deviation is 2.5. Assuming the data to be normally distributes. Find

1. How many students score between 12 and 15?
2. How many students score above 18?
3. How many students score below 18?
4. How many students score 16?

**Q2.** A skilled typist, on routine work kept a record of mistakes made per day during 300 working days

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Mistakes per day | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| No. of days | 143 | 90 | 42 | 12 | 9 | 3 | 1 |

Fit a Poisson distribution to the above data and hence calculate the theoretical frequencies.

**SECTION – 02**

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

**Q3.** In Binomial Distribution consisting of 5 independent trials, probabilities of one and two successes are 0.4096 and 0.2048 respectively. Find the probability p of the distribution.

**Q4.** The height of Adults are normally distributed with mean 160 cm and standard deviation 8 cm. Find the probability that a randomly selected Adult has a height greater than 170 cm.

**SECTION – 03**

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

**Q5.** A car hire firm has 2 cars which it hires on daily basis. The number of demands for a car on each day is distributed as Poisson’s distribution with mean 1.5. calculate the proportion of days on which there is no demand and some demand is refused.

**SECTION – 04**

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

**Q6.** Write the characteristics of normal curve.

**Q7.** A fair dice is thrown. What is the chance that either an evens number or a number greater than 3 will turn up?

**Q8.** If the probability that an individual suffers a bad reaction from a certain injection is0.001, determine the probability that out of 2000 individuals exactly will suffer a bad reaction

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