***Lab: 05***

***Course Outcome CO3*:**

***Blooms Taxonomy Level****: BT2,BT3*

Q1. If is the standard normal variate ,then find the following probabilities:

Q2. Let X be a random variable having a normal distribution with mean 30 and standard deviation 5 .Find the probability that

Q3. The average test marks in a particular test is 79. The standard deviation is 5. If the marks are normally distributed, how many students in a class of 200 did not receive marks between 75 and 82? Ans -97

Q4.Fit a normal curve to the following distribution :

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Variables (x) | 2 | 4 | 6 | 8 | 10 |
| Frequency (f) | 1 | 4 | 6 | 4 | 1 |

Q5.In a referendum 60% of voters voted in favour. A random sample of 200 voters was selected . What is the probability that in the sample

1. More than 130 voted in favour ? Ans 0.06
2. Between 105and 130 inclusive voted in favour? Ans 0.89
3. 120 voted in favour? Ans 0.05

Q6 In an examination taken by 500 candidates ,the average and the standard deviation of marks obtained (normally distributed) are 40% and 10% . Find approximately

1. How many will pass, if 50% is fixed as a minimum? Ans -79
2. What should be the minimum if 350 candidates are to pass? Ans 35%
3. How many have scored marks above 60%? Ans 11

Q7. In a distribution ,exactly normal,9.85% of the items are under 40 and 89.97% are under 60.What are the mean and standard deviation of the distribution?

Ans mean=50.04 std dev=7.78

Q8. Let X denote the number of scores on a test . If X is normally distributed with mean 100 and standard deviation 15,find the probability that X does not exceed 130.

Q9.Assuming that the diameters of 1000 brass plugs taken consecutively from a machine ,form a normal distribution with mean 0.7515 cm and standard deviation 0.0020cm .How many of the plugs are likely to be rejected if the approved diameter is

Q10.If the mean height of an Indian inspector is 170 cm with variance 25cm2, how many inspectors out of 1000 would you expect

1. Between 170 cm and 180 cm
2. Less than 160 cm