

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **II Semester B. Tech-Assignment-I**  **Course (Subject):Probability and Statistics(P&S)**  **Course Code:** B21AS204   1. By the method of least squares, find the straight line that best fits the following data.  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  | 1 | 2 | 3 | 4 | 5 | |  | 14 | 27 | 40 | 55 | 68 |  1. Fit a straight line to the following data  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | Year () | 1971 | 1981 | 1991 | 2001 | 2011 | | Production ()in thousands | 8 | 10 | 12 | 10 | 16 |   And find the expected production in 2006.   1. Fit a curve of the form for the data and hence find the estimation for  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | |  | 0 | 1 | 2 | 3 | 4 | 5 | 6 | |  | 32 | 47 | 65 | 92 | 132 | 190 | 275 |  1. Fit a curve of the form for the data.  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  | 1 | 2 | 3 | 4 | 5 | |  | 0.5 | 2 | 4.5 | 8 | 12.5 |  1. Fit a curve of the form for the data  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | |  | 5 | 6 | 7 | 8 | 9 | 10 | |  | 133 | 55 | 23 | 7 | 2 | 2 |  1. Fit a second degree parabola in the least square sense for the following data and estimate.  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  | 1 | 2 | 3 | 4 | 5 | |  | 10 | 12 | 13 | 16 | 19 |  1. Fit a second degree parabola for the following data .  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  | -2 | -1 | 0 | 1 | 2 | |  | -3.150 | -1.390 | 0.620 | 2.880 | 5.378 | |

1. Compute the Arithmetic mean from the following data

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Class interval | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 |
| Frequency | 5 | 10 | 25 | 30 | 20 | 10 |

1. Calculate median from the following data

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Value | 0-5 | 5-10 | 10-15 | 15-20 | 20-25 | 25-30 | 30-35 | 35-40 |
| Frequency | 5 | 8 | 10 | 12 | 7 | 6 | 3 | 2 |

1. Calculate mode for the following data relating to weight of 120 articles

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Weight(in gms) | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 |
| No of Articles | 14 | 17 | 22 | 26 | 23 | 18 |

1. The table below gives the marks obtained by 10 students in statistics. Calculate the standard deviation by assumed mean method

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Student number | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Marks(x) | 43 | 48 | 65 | 5 | 31 | 60 | 37 | 48 | 8 | 59 |

1. Calculate the standard deviation of the following

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Size | 6 | 7 | 30 | 9 | 1 | 11 | 12 |
| Frequency | 3 | 6 | 9 | 13 | 8 | 5 | 4 |

1. Find the correlation co-efficient and the regression lines for the following data

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| x | 1 | 2 | 3 | 4 | 5 |
| Y | 2 | 5 | 3 | 8 | 7 |

1. Compute ,  and  from the following equations of regression line:and .
2. Find rank correlation for the following data showing rank of 10 students in two tests

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Student | A | B | C | D | E | F | G | H | I | J |
| Test 1 | 70 | 68 | 67 | 55 | 60 | 60 | 75 | 63 | 60 | 72 |
| Test 2 | 65 | 65 | 80 | 60 | 68 | 58 | 75 | 63 | 60 | 70 |