

11	A random sample of 1000 workers from South India shows that their mean wages are Rs.47 per week with a standard deviation of Rs.28. A random sample of 1500 workers from North India gives a mean wage of Rs.49 per week with a standard deviation of Rs.40. Is there any significant difference between their mean levels of wages?	2	2												
SECTION C															
Q. No.	Answer the following questions: (4 x 10 =40)	CO	KL												
12 a.	The following data relate to advertisement expenditure (in lakh of rupees) and the corresponding sales (in crore of rupees): <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>Advertisement Expenditure</td> <td>10</td> <td>12</td> <td>15</td> <td>23</td> <td>20</td> </tr> <tr> <td>Sales</td> <td>14</td> <td>17</td> <td>23</td> <td>25</td> <td>21</td> </tr> </table> <p>Calculate the regression equation of X on Y and also estimate the advertisement expenditure for sales target of Rs.35 Crore</p> <p style="text-align: center;">(or)</p>	Advertisement Expenditure	10	12	15	23	20	Sales	14	17	23	25	21	3	3
Advertisement Expenditure	10	12	15	23	20										
Sales	14	17	23	25	21										
12 b.	The simple correlation co-efficient between temperature, corn yield and rainfall are $r_{12} = 0.59$, $r_{13} = 0.46$ and $r_{23} = 0.77$. Calculate the partial correlation coefficients $r_{12.3}$, $r_{23.1}$ and $r_{13.2}$.	3	3												
13 a.	Determine the trend using 5 yearly moving averages for the following data: Year 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 Production 21 22 23 25 24 22 25 26 27 26 (in '000 tonnes)	3	3												
13 b.	(or)														
	The number of units produced during 2007-14 are given below: Year 2007 2008 2009 2010 2011 2012 2013 2014 Production 56 55 51 47 42 38 35 32 (i) Fit a straight line trend and obtain the trend values. (ii) Eliminate the Trend. What components of time series are thus left over? (iii) What is the monthly increase in the number of units produced?	3	3												
14 a.	Certain pesticide is packed into bags by a machine. A random sample of 10 bags is drawn and their contents are found to weigh (in kgs) as follows: 50 49 52 44 45 48 46 45 49 45 Test if the average packing can be taken to be 50 kgs.	4	4												
14 b.	(or)														
	A group of 5 patients treated with medicine 'A' weighed 42, 39, 48, 60 and 41 kgs; second group of 7 patients from the same hospital treated with medicine 'B' weighed 38, 42, 56, 64, 68, 69 and 62 kgs. Do you agree with the claim that medicine 'B' increased the weight significantly?	4	4												

