

Name:
Enrolment No:



UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, May 2019

Course: B.Tech CSE BAO
Program: Applied Statistical Analysis
Course Code: CSIB 225

Semester: IV
Time 03 hrs.
Max. Marks: 100

Instructions:

SECTION A

S. No.		Marks	CO
Q 1	How Qualitative data is different from Quantitative data?	4	CO4
Q 2	What are the characteristics of statistics?	4	CO1
Q 3	What is the difference between classification and clustering?	4	CO5
Q 4	Explain the following: a) Measure of central tendency b) Measure of dispersion	4	CO2
Q 5	How ANOVA is different from chi Square method of hypothesis testing?	4	CO3

SECTION B

Q 6	Explain any four methods of data representation using example.	10	CO1,2																		
Q 7	With the help of diagram explain the terms neural network and decision tree. OR Calculate coefficient between X and Y using Karl Pearson coefficient correlation	10	CO5																		
	<table border="1"> <tbody> <tr> <td>X</td> <td>14</td> <td>12</td> <td>14</td> <td>16</td> <td>16</td> <td>17</td> <td>16</td> <td>15</td> </tr> <tr> <td>Y</td> <td>13</td> <td>11</td> <td>10</td> <td>15</td> <td>15</td> <td>9</td> <td>14</td> <td>17</td> </tr> </tbody> </table>	X	14	12	14	16	16	17	16	15	Y	13	11	10	15	15	9	14	17		
X	14	12	14	16	16	17	16	15													
Y	13	11	10	15	15	9	14	17													
Q 8	The scores for nine students in physics and math are as follows: Physics: 35, 23, 47, 17, 10, 43, 9, 6, 28 Mathematics: 30, 33, 45, 23, 8, 49, 12, 4, 31 Compute the student's ranks in the two subjects and compute the Spearman rank correlation.	10	CO 4																		
Q 9	With the help of examples explain what correlation is and what are the different types of correlations in statistics?	10	CO 3																		

SECTION-C

Q 10	Find the two lines of regression from the following data:	20	CO1,5																						
	<table border="1"> <thead> <tr> <th>Husband Age</th> <th>25</th> <th>22</th> <th>28</th> <th>26</th> <th>35</th> <th>20</th> <th>22</th> <th>40</th> <th>20</th> <th>18</th> </tr> </thead> <tbody> <tr> <td></td> <td>18</td> <td>15</td> <td>20</td> <td>17</td> <td>22</td> <td>14</td> <td>16</td> <td>21</td> <td>15</td> <td>14</td> </tr> </tbody> </table>	Husband Age	25	22	28	26	35	20	22	40	20	18		18	15	20	17	22	14	16	21	15	14		
Husband Age	25	22	28	26	35	20	22	40	20	18															
	18	15	20	17	22	14	16	21	15	14															
	Here estimate 1)the age of husband when the age of wife is 19 2)the age of wife , when the age of husband is 30 OR What are the different steps to test hypothesis more than two samples? Explain with suitable example.																								

Q 11	<p>a) What is line of best fit? With the help of example explain regression line a) Y on X and b) X on y</p> <p>b) A dice is tossed 120 times with the following results</p>						20	CO3,4
No. turned up	1	2	3	4	5	6		
Frequency	30	25	18	10	22	15		
<p>Test the hypothesis that the dice is unbiased (Given Chi square= 11.7, alpha=0.05, DOF=5)</p>								

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Instructions:

SECTION A

S. No.		Marks	CO
Q 1	How Categorical data is different from Numerical data?	4	CO4
Q 2	What are the uses of statistics?	4	CO1
Q 3	How correlation analysis is useful for analyzing pollution?	4	CO3
Q 4	Explain the following: a) Measure of central tendency b) Measure of dispersion	4	CO2
Q 5	Explain a) Supervised learning b) Unsupervised learning	4	CO5

SECTION B

Q 6	Calculate coefficient of correlation between death and birth rate of following data <table border="1" style="margin-left: 20px;"> <tr> <td>Birth rate</td> <td>24</td> <td>26</td> <td>32</td> <td>33</td> <td>35</td> <td>30</td> </tr> <tr> <td>Death rate</td> <td>15</td> <td>20</td> <td>22</td> <td>24</td> <td>27</td> <td>24</td> </tr> </table>	Birth rate	24	26	32	33	35	30	Death rate	15	20	22	24	27	24	10	CO3
Birth rate	24	26	32	33	35	30											
Death rate	15	20	22	24	27	24											
Q 7	With the help of diagram explain the terms Artificial neural network and Support vector machine. OR Find Spearman's Rank correlation between X and Y for this set of data X: 13 20 22 18 19 11 10 15 Y: 17 19 23 16 20 10 11 18	10	CO4,5														
Q 8	What is ANOVA? Explain different types of ANOVA with example.	10	CO2														
Q 9	What are the different ways of representing data? Explain any four with example.	10	CO1														

SECTION-C

Q 10	a) With the help of examples explain what correlation is and what are the different types of correlations in statistics? b) What is line of best fit? With the help of example explain regression line a) Y on X and b) X on y	20	CO3
Q 11	What are the different steps to test hypothesis more than two samples? Explain with suitable example. OR Find the two lines of regression from the following data:	20	CO4,5

	Husband Age	25	22	28	26	35	20	22	40	20	18		
		18	15	20	17	22	14	16	21	15	14		
Here estimate 1)the age of husband when the age of wife is 19 2)the age of wife , when the age of husband is 30													