

Name:  
Enrolment No:



**UNIVERSITY OF PETROLEUM AND ENERGY STUDIES**  
**School of Health Sciences**

**End Semester Examination, December 2020**

**Programme Name: B.Sc. Food, Nutrition and Dietetics**  
**Course Name : Biostatistics and Epidemiology**  
**Course Code : HSCC2006**

**Semester : III rd**  
**Time: 3 hour**  
**Max. Marks: 100**

**Instructions : Read all questions carefully**

**SECTION A**

	<b>Each Question will carry 5 marks</b>	<b>Marks</b>	
	<b>Instructions: Complete the statement/Select the correct answer(s)</b>		
1.	(a) Incidence is defined as ..... (b) Prevalence is defined as .....	<b>5</b>	<b>CO1</b>
2.	The two important advantages of cohort studies are (a)..... And (b).....	<b>5</b>	<b>CO2</b>
3.	In randomization, In single blinded study, (a).....whereas in double blinded study (b) .....	<b>5</b>	<b>CO2</b>
4.	Natural history of disease is one of the major element of (a) ..... Name the two scientist who gave germ theory of diseases (b)..... and (c)..... they show one to one relationship between (d)..... and (e).....	<b>5</b>	<b>CO3</b>
5.	Write any five principles of Bradford hill criteria: a. .... b. .... c. .... d. .... e. ....	<b>5</b>	<b>CO1</b>
6.	In germ theory of diseases a. Infectivity is ..... b. Virulence is .....	<b>5</b>	<b>CO3</b>

**SECTION B**

	<b>1. Each question will carry 10 marks</b> <b>2. Instruction: Write short / brief notes</b>		
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7.	What are Case Control Studies? Give advantages and disadvantages of case control studies. Write any two differences between case control study and cohort study.	CO1	10																										
8.	How prevalence and incidence rate are estimated? What is point prevalence, period prevalence and Lifetime prevalence?	CO3	10																										
9.	Discuss the prospective and retrospective cohort studies. Write the advantages of cohort studies.	CO2	10																										
10.	Calculate the regression coefficients and find the two lines of regression from the following data:	CO4	10																										
	<table border="1"> <tr> <td><math>x</math></td> <td>57</td> <td>58</td> <td>59</td> <td>59</td> <td>60</td> <td>61</td> <td>62</td> <td>64</td> </tr> <tr> <td><math>y</math></td> <td>67</td> <td>68</td> <td>65</td> <td>68</td> <td>72</td> <td>72</td> <td>69</td> <td>71</td> </tr> </table>			$x$	57	58	59	59	60	61	62	64	$y$	67	68	65	68	72	72	69	71								
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11.	Construct multiple bar diagram for the following data which represented agricultural production for the period from 2000-2004	CO4	10																										
	<table border="1"> <thead> <tr> <th>Year</th> <th>Food grains (tones)</th> <th>Vegetables (tones)</th> <th>Others(tones)</th> </tr> </thead> <tbody> <tr> <td>2000</td> <td>100</td> <td>30</td> <td>10</td> </tr> <tr> <td>2001</td> <td>120</td> <td>40</td> <td>15</td> </tr> <tr> <td>2002</td> <td>130</td> <td>45</td> <td>25</td> </tr> <tr> <td>2003</td> <td>150</td> <td>50</td> <td>25</td> </tr> <tr> <td>2004</td> <td>160</td> <td>55</td> <td>30</td> </tr> </tbody> </table>			Year	Food grains (tones)	Vegetables (tones)	Others(tones)	2000	100	30	10	2001	120	40	15	2002	130	45	25	2003	150	50	25	2004	160	55	30		
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<b>SECTION C</b>																													
12.	Set up an analysis of variance table for the following two way design results at 5% F limit with $F(2,6) = 5.14$ and $F(3,6) = 4.76$ :	CO5	20																										
	<table border="1"> <thead> <tr> <th rowspan="3">Varieties of fertilizers</th> <th colspan="3">Per acre production data</th> </tr> <tr> <th colspan="3">Varieties of seeds</th> </tr> <tr> <th>A</th> <th>B</th> <th>C</th> </tr> </thead> <tbody> <tr> <td>E</td> <td>6</td> <td>5</td> <td>5</td> </tr> <tr> <td>F</td> <td>7</td> <td>5</td> <td>4</td> </tr> <tr> <td>G</td> <td>3</td> <td>3</td> <td>3</td> </tr> <tr> <td>H</td> <td>8</td> <td>7</td> <td>4</td> </tr> </tbody> </table>			Varieties of fertilizers	Per acre production data			Varieties of seeds			A	B	C	E	6	5	5	F	7	5	4	G	3	3	3	H	8	7	4
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<b>OR</b>																													
	Out of 800 families with 5 children each, how many would you expect to have (i) 3 boys (ii) 5 girls (iii) either 2 or 3 boys (iv) at least one boy? Assume equal probabilities for boys and girls.	CO5	20																										