NMIMS GLOBAL ACCESS
SCHOOL FOR
CONTINUING EDUCATION

NMIMS Global Access

School for Continuing Education (NGA-SCE)

Course: **Decision Science**

Internal Assignment Applicable for June 2023 Examination

Assignment Marks: 30

Instructions:

- *All Questions carry equal marks.*
- *All Questions are compulsory*
- *All answers to be explained in not more than 1000 words for question 1 and 2 and for question 3 in not more than 500 words for each subsection. Use relevant examples, illustrations as far as possible.*
- *All answers to be written individually. Discussion and group work is not advisable.*
- *Students are free to refer to any books/reference material/website/internet for attempting their assignments, but are not allowed to copy the matter as it is from the source of reference.*
- *Students should write the assignment in their own words. Copying of assignments from other students is not allowed.*
- *Students should follow the following parameter for answering the assignment questions.*

For Theoretical Answer	
Assessment Parameter	Weightage
Introduction	20%
Concepts and Application related to the question	*60%*
Conclusion	*20%*

For Numerical Answer	
Assessment Parameter	Weightage
Understanding and usage of the formula	20%
Procedure / Steps	*60%*
Correct Answer & Interpretation	*20%*

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Q 1: Bad gums may mean a bad mood. Researchers discovered that 85% of people who have suffered a bad mood had periodontal disease, an inflammation of the gums. Only 29% of healthy people have this disease. Suppose that in a certain community bad moods are quite rare, occurring with only 10% probability. If someone has periodontal disease, what is the probability that he or she will have a bad mood? **(10 Marks)**

Note: Draw the tree diagram for the above problem. Handwritten tree diagram is prohibited.

Q 2: Using MS-EXCEL show the Regression model, consider 'Instagram followers' as dependent variable and 'no f post per day' as an independent variable. Write the interpretation of EXCEL Tables. Write the conclusion on the fitting of your model also.

(10 Marks)

no of followers	no of post per day
439	2
340	1
315	4
444	5
377	2
456	5
495	2
304	2
401	5
305	5
338	4
348	2
402	1
395	5

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Q 3A): 1000 light bulbs with a mean life of 120 days are installed in a new factory and their length of life is normally distributed with standard deviation of 20 days.

If it is decided to replace all the bulbs together, what interval should be allowed between replacements if not more than 10% should expire before replacement? **(5 Marks)**

Note: You are not supposed to use EXCEL or any other software to write this answer.

Q 3B): calculate the average age of migrants for both the categories of gender and write your interpretation. **(5 Marks)**

Age group	Male	Female
0-4	98,34,738	91,27,975
5-9	1,09,59,506	99,58,059
10-14	1,24,25,108	1,14,51,227
15-19	1,26,83,733	1,65,18,666
20-24	1,31,97,283	3,36,58,466
25-29	1,30,45,214	3,75,22,017
30-34	1,21,34,009	3,42,86,096
35-39	1,20,60,030	3,30,54,887
40-44	1,09,00,143	2,72,61,236
45-49	97,04,026	2,34,47,716
50-54	79,40,152	1,78,42,986
55-59	61,61,754	1,51,92,910
60-64	54,01,736	1,43,47,372
65-69	36,87,082	1,01,41,196
70-74	26,62,421	70,33,728
75-79	13,41,572	34,93,001
80-85	14,61,296	42,53,695

Note: You are not supposed to use EXCEL or any other software to write this answer

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