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( OR )

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PG/2nd Sem/MCB-295.2/24

2. (c) Determine if there is a significant difference in the average scores between the two teams using online software. Note the tool's name and the outcomes that were attained. Save your results and conclusion to the MS Word document on the designated desktop, naming the folder with your roll number. 5

The following data is given :

Team A : Score : 60, 68, 70, 63, 72

Team B : Score : 62, 68, 69, 64, 73

3. Laboratory Notebook 2
4. Viva Voce 3
5. Internal Assessment 5

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**2024**

**M.Sc. 2nd Semester Examination**

**MICROBIOLOGY**

**PAPER : MCB-295.2**

**[Biomathematics and Bioinformatics]**

**[Practical]**

*Full Marks : 25*

*Time : 2 hours*

*The figures in the right-hand margin indicate marks.*

1. Construct a phylogenetic tree using the protein or nucleotide sequence that has been provided by performing multiple sequence alignment. Save your results to the designated desktop, naming the folder with your roll number.  
[Procedure-4, Result-6 =10]

( 2 )

2. (a) Six male and six female students' height and weight are provided. Using online software, ascertain whether the mean body mass indices (BMI) of these groups differ significantly. Note the tool's name and the outcomes that were attained. Save your results to the MS Word document on the designated desktop, naming the folder with your roll number. 5

Sl. No.	Female		Male	
	Height	Weight	Height	Weight
1	1.65	60	1.75	70
2	1.70	65	1.80	75
3	1.62	62	1.70	80
4	1.68	68	1.85	72
5	1.75	70	1.78	78
6	1.65	60	1.75	70

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( 3 )

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2. (b) Genome length (in Mbp) and gene content of six *Escherichia coli* strains have been provided. Determine whether there is any significant correlation ( $r$  at  $p < 0.01/0.05/0.10$ ) present between them using online software. Note the tool's name and the outcomes that were attained. Save your results and conclusion to the MS word document on the designated desktop, naming the folder with your roll number. 5

Sl. No.	Strains	Genome length (Mbp)	Gene content
1	<i>E. coli</i> str. K-12	4.64	4298
2	<i>E. coli</i> O157:H7	5.59	5155
3	<i>E. coli</i> 272	5.57	5116
4	<i>E. coli</i> E2855	5.94	5569
5	<i>E. coli</i> NCTC 9112	5.47	4964
6	<i>E. coli</i> 95NR1	5.64	5266

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