

M.M. ENGINEERING COLLEGE, MULLANA (AMBALA)**DEPARTMENT OF CSE****Tutorial / Assignment Sheet No. : 1.2**Branch / Semester: CSE / 4th

Course Name: Discrete Mathematics

Course Code: BCSE-508

Topics covered: Principle of Inclusion & Exclusion, Venn diagram (Unit-1)

Date of Release: 27.01.2021

Last date of submission: 03.02.2021

Total Marks: 30

Assignment Outcomes:

- Able to map the real life problems using the concepts of sets.
- Able to understand the application of Principles of Inclusion & Exclusion as well as Venn diagram.
- Able to solve various problems related to Principles of Inclusion & Exclusion as well as Venn diagram.

| Q. No. | "All Questions are compulsory" | Marks |
|--------|---|-------|
| 1. | <p align="center">Section-A (Each question of 1 mark)</p> <p>Let A, B & C be any three arbitrary sets, then show the following using Venn diagram (if possible show expression value also):</p> <div style="display: flex; justify-content: space-between;"> <div> <p>i) Only A occurs (when 3 sets A, B, C)</p> <p>iv) At least two out of three occurs</p> </div> <div> <p>ii) Neither A nor B nor C occurs</p> <p>v) At least one occurs</p> </div> <div> <p>iii) A occurs</p> <p>vi) Exactly two occurs</p> </div> </div> | 06 |
| 2. | <p align="center">Section-B (Each question of 2 mark)</p> <p>Among 50 students in a class, 26 got an A in the first examination and 21 got an A in the second examination. If 7 students did not get an A in either examination, how many students got an A in both examinations?</p> <p>3. Fill the proper expression against? and also prove it. $n(A \cup B) = ?$</p> <p>4. Fill the proper expression against? and also prove it. $n(A \cup B \cup C) = ?$</p> <p>5. Fill the proper expression against? and also prove it. $n(A \cup B \cup C \cup D) = ?$</p> <p>6. Seventy- Five children went to an amusement park where they can ride on the merry-go-round, roller coaster, and ferris wheel. It is known that 20 of them have taken all three rides, and 55 of them have taken at least two of rides. Each ride cost Rs/- 10 and total receipt of the amusement park was Rs/- 1400. Determine the number of children who did not try any of the rides.</p> | 10 |
| 7. | <p align="center">Section-C (Each question of 4 mark)</p> <p>If the Number of student who got an A in the first examination is equal to that in the second examination, if the total students who got an A in exactly one examination is 40, and if 4 students did not get an A in either examination, determine the number of students who got an A in the:</p> <p>i) First examination only ii) Second examination only iii) Both examination only</p> <p>8. Thirty cars were assembled in a factory. The options available were a radio, an air conditioner and white-wall tires. It is known that 15 of the cars have radios, 8 of them have air conditioners, and 6 of them have white-wall tires. Moreover, 3 of them have all three options. Find out how many cars do not have any options at all?</p> | 08 |
| 9. | <p align="center">Section-D (6 mark question)</p> <p>Out of total of 130 students, 60 are wearing hats to class, 51 are wearing scarves, and 30 are wearing both hats scarves. Of the 54 students who are wearing sweaters, 26 are wearing hats, 21 wearing scarves, and 12 are wearing both hat and scarves. Everyone wearing neither a hat nor a scarf is wearing gloves.</p> <p>i) How many students are wearing gloves?</p> <p>ii) How many students not wearing a sweater are wearing hats but not scarves ?</p> <p>iii) How many students not wearing a sweater are wearing neither a hat nor a scarf ?</p> | 06 |

Note for students: Students are required to submit handwritten solutions of given assignment / tutorial sheet on or before Last date of submission otherwise penalty in terms of deduction in marks will be made as per following rule:

If submitted on or before last date then Deduction of marks = 0

If submission delayed by (1-7) days then Deduction of marks = 5

If submission delayed by (8-14) days then Deduction of marks = 10

If submission delayed by more than 15 days then Deduction of marks = 12.5