Birla Institute of Technology & Science, Pilani

**Work Integrated Learning Programmes Division**

**SECOND SEMESTER 2022-23**

**COURSE NUMBER: ENGG ZC242 MAINTENANCE AND SAFETY**

**ASSIGNMENT 10 MARKS**

* Use Excel Software to solve the problem
* You can use other software tool also

Question:

The jobs of the following network have the indicated time estimates as shown in the Table

|  |  |  |  |
| --- | --- | --- | --- |
| Job | Optimistic | Most Likely | Pessimistic |
| (1,2) | 3 | 6 | 15 |
| (1,6) | 2 | 5 | 14 |
| (2,3) | 6 | 12 | 30 |
| (2,4) | 2 | 5 | 8 |
| (3,5) | 5 | 11 | 17 |
| (4,5) | 3 | 6 | 15 |
| (6,7) | 3 | 9 | 27 |
| (5,8) | 1 | 4 | 7 |
| (7,8) | 4 | 19 | 28 |

1. Draw the project network
2. Calculate the length and variance of the critical path
3. What is the probability that the jobs on the critical path will be completed by the due date of 41 days
4. What is the probability that the jobs on the next critical path will be completed by the due date
5. What is the estimate that the entire project will be completed by the due date
6. Using standard PERT assumptions what is the probability of completing the project

– before 30 days

–between 15 and 35 days

After 38 days