

Code No: P18MBO01

HALL TICKET NUMBER

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PACE INSTITUTE OF TECHNOLOGY & SCIENCES::ONGOLE
(AUTONOMOUS)

III B.TECH I SEMESTER END REGULAR EXAMINATIONS, JAN/FEB - 2022
INDUSTRIAL ENGINEERING & MANAGEMENT
(ME Branch)

Time: 3 hours

Max. Marks: 60

Note: Question Paper consists of Two parts (Part-A and Part-B)

PART-A

Answer all the questions in Part-A (5X2=10M)

| Q.No. | Questions | Marks | CO | KL |
|-------|--|-------|----|----|
| 1. | a) Differentiate between production management and industrial engineering. | [2M] | 1 | 2 |
| | b) List the merits and demerits of process layout. | [2M] | 2 | 1 |
| | c) List any five therblings symbols | [2M] | 3 | 1 |
| | d) State the concept of Zero defects. | [2M] | 4 | 1 |
| | e) Define supply chain management | [2M] | 5 | 1 |

PART-B

Answer One Question from each UNIT (5X10=50M)

| Q.No. | Questions | Marks | CO | KL |
|----------|--|-------|----|----|
| UNIT-I | | | | |
| 2. | a) Explain the contributions of Taylor for scientific management and how it leads to the concept of scientific management. | [5M] | 1 | 2 |
| | b) Discuss the role of an industrial engineer | [5M] | 1 | 2 |
| OR | | | | |
| 3. | a) Discuss the Qualitative tools of Industrial Engineering. | [5M] | 1 | 2 |
| | b) Describe the principles of scientific management in brief. | [5M] | 1 | 2 |
| UNIT-II | | | | |
| 4. | a) How plant location is important to Business profitability? | [5M] | 2 | 1 |
| | b) What is plant layout? Discuss the need for process layout. | [5M] | 2 | 2 |
| OR | | | | |
| 5. | a) Explain briefly the quantitative techniques for optimal design of layouts. | [5M] | 2 | 2 |
| | b) Explain the importance of preventive maintenance in production management. | [5M] | 2 | 2 |
| UNIT-III | | | | |
| 6. | a) Name the various recording techniques used in method study. Give the Various symbols used in recording techniques with their meaning. | [5M] | 3 | 1 |
| | b) Discuss in detail about string diagram. | [5M] | 3 | 2 |
| OR | | | | |
| 7. | Define Ergonomics and discuss its scope. Explain ergonomics design considerations in relation work. | [10M] | 3 | 2 |
| UNIT-IV | | | | |
| 8. | a) Discuss in detail about SQC. | [5M] | 4 | 2 |
| | b) Differentiate between control charts for attributes and control charts for variables. | [5M] | 4 | 2 |
| OR | | | | |
| 9. | a) Explain the objectives of ISO quality systems and discuss the major clauses in it. | [5M] | 4 | 2 |
| | b) What are quality circles and explain the purpose of it. | [5M] | 4 | 2 |
| UNIT-V | | | | |



| 10. | a) | Discuss in detail about Enterprise Resource Planning. | [5M] | 5 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------|-------|---|----------|-------|-------|-------|------|---|---|----|------|---|---|----|------|---|---|----|------|---|---|---|------|---|-----|---|------|---|---|---|------|---|---|----|------|---|---|---|--|--|--|
| | b) | Explain the objectives of Supply Chain Management. | [5M] | 5 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| OR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11. | a) | Differentiate between CPM and PERT | [3M] | 5 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | b) | For the given activities determine: 1. Critical path using PERT. 2. Calculate variance and standard deviation for each activity. | [7M] | 5 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Activity</th> <th>t_o</th> <th>t_m</th> <th>t_p</th> </tr> </thead> <tbody> <tr> <td>1--2</td> <td>6</td> <td>9</td> <td>12</td> </tr> <tr> <td>1--3</td> <td>3</td> <td>4</td> <td>11</td> </tr> <tr> <td>2--4</td> <td>2</td> <td>5</td> <td>14</td> </tr> <tr> <td>3--4</td> <td>4</td> <td>6</td> <td>8</td> </tr> <tr> <td>3--5</td> <td>1</td> <td>1.5</td> <td>5</td> </tr> <tr> <td>2--6</td> <td>5</td> <td>6</td> <td>7</td> </tr> <tr> <td>4--6</td> <td>7</td> <td>8</td> <td>15</td> </tr> <tr> <td>5--6</td> <td>1</td> <td>2</td> <td>3</td> </tr> </tbody> </table> | Activity | t_o | t_m | t_p | 1--2 | 6 | 9 | 12 | 1--3 | 3 | 4 | 11 | 2--4 | 2 | 5 | 14 | 3--4 | 4 | 6 | 8 | 3--5 | 1 | 1.5 | 5 | 2--6 | 5 | 6 | 7 | 4--6 | 7 | 8 | 15 | 5--6 | 1 | 2 | 3 | | | |
| Activity | t_o | t_m | t_p | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1--2 | 6 | 9 | 12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1--3 | 3 | 4 | 11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2--4 | 2 | 5 | 14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3--4 | 4 | 6 | 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3--5 | 1 | 1.5 | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2--6 | 5 | 6 | 7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4--6 | 7 | 8 | 15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5--6 | 1 | 2 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
