First Semester M.Com. (F&A) Examination, February 2019  
(CBCS Scheme)  
FINANCE AND ACCOUNTING  
Paper – 1.5 : QT for Accounting & Finance  

Time : 3 Hours  
Max. Marks : 70  

**Instruction**: Answer all Sections.

**SECTION – A**

Answer any seven sub questions. \((7 \times 2 = 14)\)

1. a) What is geometric progression ?  
b) What is random variable ?  
c) Differentiate between node and activity.  
d) What is carrying cost ?  
e) What is a uncertainty ?  
f) What is variance ?  
g) What is total float ?  
h) List the different time estimates in PERT.  
i) What are mutually exclusive events ?  
j) What do you mean by crashing in a project ?

**SECTION – B**

Answer any four questions of the following. \((4 \times 5 = 20)\)

2. Explain the managerial application of geometric progression.

P.T.O.
3. Consider the following problem:
   Minimize $Z = 3X_1 + 4X_2 - 5X_3$
   Subject to
   $2X_1 + 3X_2 - 5X_3 = 10$
   $X_1 - 2X_2 - 3X_3 = 8$
   $X_1, X_2, X_3 > 0$
   Define the dual of this problem.

4. Discuss the different types of decision making situations.

5. A bag contains 5 red balls, 6 green balls and 7 white balls. If you draw three balls at random what is the probability that you get all green colour balls?

6. Draw a project network for the following data.

<table>
<thead>
<tr>
<th>1–2</th>
<th>1–3</th>
<th>2–4</th>
<th>3–4</th>
<th>4–5</th>
<th>5–6</th>
<th>2–6</th>
<th>6–7</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>8</td>
<td>3</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

7. Discuss the properties of a normal distribution.

SECTION – C

Answer any three questions. Each question carries twelve marks. (3x12=36)

8. A paper mill produces two grades of paper namely X and Y. Because of raw restrictions, it cannot produce more than 400 tons of grade X and 300 tons of grade Y in a week. There are 160 production hours in a week. It requires 0.2 and 0.4 hours to produce a ton of products X and Y respectively with corresponding profits of Rs. 200 and Rs. 500 per ton. Formulate the above as a linear programming problem to maximize profit and solve it.

9. Discuss any two inventory models with diagram.

10. A company needs 1000 electric drills per year. The ordering cost for these is Rs. 100/- per order and carrying cost is assumed to be 40% of the per cost unit. In orders of less than 120 drill costs Rs. 78/-. For orders of 120 or more the cost drops per Rs. 50/- per unit. Should the company take advantage of quantity discount?
11. Explain the significance of inventory management in an organization.

12. A project has activities with the following normal and crash times and cost.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Predecessor</th>
<th>Normal Time</th>
<th>Crash Time</th>
<th>Normal cost ₹</th>
<th>Crash cost ₹</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>–</td>
<td>4</td>
<td>3</td>
<td>8,000</td>
<td>9,000</td>
</tr>
<tr>
<td>B</td>
<td>A</td>
<td>5</td>
<td>3</td>
<td>16,000</td>
<td>20,000</td>
</tr>
<tr>
<td>C</td>
<td>A</td>
<td>4</td>
<td>3</td>
<td>12,000</td>
<td>13,000</td>
</tr>
<tr>
<td>D</td>
<td>B</td>
<td>6</td>
<td>5</td>
<td>34,000</td>
<td>35,000</td>
</tr>
<tr>
<td>E</td>
<td>C</td>
<td>6</td>
<td>4</td>
<td>42,000</td>
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</tr>
<tr>
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<td>D</td>
<td>5</td>
<td>4</td>
<td>16,000</td>
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<tr>
<td>G</td>
<td>E</td>
<td>7</td>
<td>4</td>
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<td>72,000</td>
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<tr>
<td>H</td>
<td>G</td>
<td>4</td>
<td>3</td>
<td>2,000</td>
<td>5,000</td>
</tr>
</tbody>
</table>

Determine a crashing scheme for the above project so that the total project time is reduced by 3 weeks.