Name: **Enrolment No:**	UPES UNIVERSITY WITH A PURPOSE

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
Online End Semester Examination, December 2020

Course: Mine Management **Semester: VII**
Programme: B. Tech (Mining Engineering) **Time: 03 hrs.**
Course Code: PEMI 4003 **Max. Marks: 100**

SECTION A

1. Each Question will carry 5 Marks
2. Instruction: Complete the statement / Select the correct answer(s)

Sl. No.	Question	CO
Q 1	(A) Which of the following is correct if the decisions are made from the top management (i.) Centralization (ii.) Decentralization (iii.) Initiative (iv.) Subordination of Individual Interests (B) Abstain responsibility and the need to be directed comes under (i.) Theory Y (ii.) Theory X (iii.) Henri fayol's principles of management (iv.) None (C) The command running from top to bottom of the organization comes under (i.) Scalar Chain (ii.) Initiative (iii.) Order (iv.) Esprit de corps (D) The right to give orders and power to exact obedience comes under (i.) Division of work (ii.) Authority (iii.) Discipline (iv.) Unity of command (E) Which management is responsible for creating a context for change (i.) Top level management (ii.) Middle level management (iii.) First line management (iv.) All	**CO1**
Q 2	(A) Top Manager's major responsibility is to coordinate and link groups, departments, and divisions within a companyGrade M24 (i.) TRUE (ii.) FALSE	

	(B) Minimal number of levels of management between individual employees and executive leaders comes under (i.) Tall Hierarchical Structure (ii.) Flat Organizational Structure (iii.) Financial Management (iv.) Personnel Management (C) Which of the following method is used for the solution of a linear programming problem (i.) Graphical Method (ii.) Two phase method (iii.) Big M method (iv.) All (D) Which of the following is the deterministic approach in inventory models (i.) Economic order quantity model with uniform rate of demand (ii.) Economic order quantity model by trial and error method (iii.) Both (iv.) None (E) Which of the following is the multi criteria decision making method (i.) Linear programming method (ii.) Transportation method (iii.) Analytical hierarchy method (iv.) Queuing method	**CO1**
Q 3	(A) Which of the following is the objective of network analysis (i.) Reduction of set up cost (ii.) Increase in indirect cost (iii.) Delay in receiving information on change (iv.) Macro and micro global resources (B) Two or more activity which have the same head and tail events is called (i.) Looping (ii.) Dummy Activity (iii.) Successor Activity (iv.) Predecessor Activity (C) Some customers are served before the order without considering their ceder of arrival comes under (i.) Service in random order (ii.) Last come First served (iii.) Service on some priority procedure (iv.) First Come First served (D) Which of the following is the external cause of delay in the project (i.) Technological (ii.) Weak monitoring (iii.) Expended project duration (iv.) All (E) Modi method is used to determine the penalty cost i.e. the difference between the smallest and next smallest costs in each row and column (i.) TRUE (ii.) FALSE	**CO1**

<table>
<tr><td>Q 4</td><td>(A) Write a short notes on the role of Top Managers with suitable flow diagram
(B) Write a short notes on the Planning Management Function</td><td>CO2</td></tr>
<tr><td>Q 5</td><td>(A) Write a short notes on Tall Hierarchical Structure with neat sketch
(B) Write the different advantages of a Flat Structure</td><td>CO2</td></tr>
<tr><td>Q 6</td><td>(A) Write a short notes on any three importance of Production Management
(B) Write a short notes on work study with suitable flow chart</td><td>CO2</td></tr>
<tr><td colspan="3">SECTION B
1. Each question will carry 10 marks
2. Instruction: Write short / brief notes</td></tr>
<tr><td>Q 7</td><td>Describe in details the different parameters of the production planning and control.
OR
Describe in details the different controllable (or internal) factor influencing productivity.</td><td>CO1</td></tr>
<tr><td>Q 8</td><td>A company produces 160 kg of plastic moulded parts of acceptable quality by consuming 200 kg of raw materials for a particular period. For the next period, the output is doubled (320 kg) by consuming 420 kg of raw material and for a third period, the output is increased to 400 kg by consuming 400 kg of raw material. Determine the productivity in each period.</td><td>CO2</td></tr>
<tr><td>Q 9</td><td>Solve the LPP by graphical method
Maximize (Z) = $100X_1 + 40X_2$
Subject to
$5X_1 + 2X_2 \leq 1000$
$3X_1 + 2X_2 \leq 900$
$X_1 + 2X_2 \leq 500$
and $X_1, X_2 \geq 0$</td><td>CO3</td></tr>
<tr><td>Q 10</td><td>Obtain the initial basic feasible solution using North -West Corner Rule of a transportation problem whose cost and rim requirement table is given below.
<table>
<tr><th>Origin/ Destination</th><th>D1</th><th>D2</th><th>D3</th><th>Supply</th></tr>
<tr><td>O1</td><td>2</td><td>7</td><td>4</td><td>5</td></tr>
<tr><td>O2</td><td>3</td><td>3</td><td>1</td><td>8</td></tr>
<tr><td>O3</td><td>5</td><td>4</td><td>7</td><td>7</td></tr>
<tr><td>O4</td><td>1</td><td>6</td><td>2</td><td>14</td></tr>
<tr><td>Demand</td><td>7</td><td>9</td><td>18</td><td>34</td></tr>
</table></td><td>CO3</td></tr>
<tr><td>Q 11</td><td>A departmental store has a single cashier. During the rush hours, customers arrive at the rate of 20 customers per hour. The average number of customer that can be processed by the cashier is 24 per hour. Assume that the conditions for the use of single - channel queuing model apply what is the
(a) Probability the cashier is idle
(b) Average time of customers in the queue
(c) Average number of customers spends in the system
(d) Average time customer spends in the queue waiting for service</td><td>CO3</td></tr>
<tr><td colspan="3">SECTION-C
1. Each Question carries 20 Marks.
2. Instruction: Write long answer.</td></tr>
<tr><td>Q 12</td><td>Solve the following LPP using Simplex Method
Maximize (Z) = $12X_1 + 16X_2$
Subject to
$10X_1 + 20X_2 \leq 1000$</td><td>CO4</td></tr>
</table>

$8X_1 + 8X_2 \leq 900$
and $X_1, X_2 \geq 0$

OR

A project consist of a series of tasks labeled A, B, ... H, I; A<D, E; C<G B<F, H, D<F,G<I The notation X<Y means that the task X must be completed before Y is started. Draw a graph to represent the sequence of tasks and find the minimum time of completion of the project, when the time (in day's) of completion of each task is as follows:

Task	A	B	C	D	E	F	G	H	I
Time (in Days)	23	8	20	16	24	18	19	4	10