**JAIPURIA INSTITUTE OF MANAGEMENT, INDORE**

PGDM, Fifth Trimester (Batch 2019 - 2021)

END TERM EXAMINATION, January, 2021

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| Course Name | **Materials & Inventory Management** | Course Code | **OM 502** |
| Max. Time | 2 Hours  | Max. Marks | **40** |

**INSTRUCTIONS:**

* The End-Term exam shall be a combination of Moodle, and Pen-Paper based examination.
* All students are required to login on Moodle and open the question paper.
* Moodle password for End-Term Examination is: - @Chapman&3
* Students shall find FIVE questions on Moodle. Each question carries 8 marks.
* Total time allocated for these three Moodle questions is 60 minutes.
* Sending pictures of all the sheets for the theory question is COMPULSORY. In absence of the pictures of these theory question answers, a student shall be awarded ZERO marks.
* Please note that if answers of two are found similar, then both the students shall be awarded ZERO marks.
* Please write the first line of every question on each answer.

*All questions are Compulsory*

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Q1. Product” Z” is made up of two units of “A” and three units of “B”. Each unit of “A” is made up of two units of “C” and three units of “D”. Lead time for fabrication and assembly of “Z” is two weeks. Products A, B, C, D takes one week each. Forty units of “Z” are required in week 10, Currently there is NO on hand inventory of “Z”. Show Bill of material and develop MRP plan. **(8 Marks)**

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Q1. Product” K” is made up of one unit of “A” and two units of “B”. Each unit of “A” is made up of three units of “C” and two units of “D. Lead time for fabrication and assembly of “K” is two weeks. Products A, B, C, D takes three weeks each. Forty units of “K” are required in week 10, Currently there is NO on hand inventory of “K”. Show Bill of material and develop MRP plan.

 **(8 Marks)**

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Q2. “Kriti Polymers” is an organization engaged in manufacturing of poly-propylene requires 6000 Kg raw material each year. The cost of placing an order is Rs. 5000/- whereas carrying cost is 22 % of material price. Following prices are offered. Develop the optimum inventory policy for “Kriti Polymers”.

|  |  |
| --- | --- |
| Quantity per order | Price per Kg |
| Less than 1000 Kg | 1000 |
| 1000 – 1999 Kg | 950 |
| 2000Kg or above | 900 |

**(8 Marks)**

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Q2. “Khushboo Soaps” is an organization engaged in manufacturing of detergents requires 8000 Kg raw material each year. The cost of placing an order is Rs. 4000/- whereas carrying cost is 20 % of material price. Following prices are offered. Develop the optimum inventory policy for “Khushboo Soaps”.

|  |  |
| --- | --- |
| Quantity per order | Price per Kg |
| Less than 1000 Kg | 500 |
| 1000 – 1999 Kg | 450 |
| 2000 Kg or above | 400 |

**(8 Marks)**

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Q3. “Stain Free Limited” produces washing detergents. The demand of detergent in four quarters is: - Quarter 1 (April-June) 700 MT; Quarter 2 (July – September) 1000 MT; Quarter 3 (October - December) 1300 MT and Quarter 4 (January – March) – 1000 MT.

At the beginning of quarter 1, there is No inventory and 25 workers are employed. The productivity is 0.5 MT per worker per day. Each quarter has 80 working days. The cost of hiring is Rs. 10,000 per worker and cost of Layoff is Rs. 15,000 per worker. The inventory carrying cost is Rs. 500 per MT per quarter. Two options are proposed, either manage with inventory or vary the work force. Develop an optimum plan for “Stain-Free Limited”. **(8 Marks)**

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Q3. “Glorious Paints Limited” produces decorative paints. The demand of paints in four quarters is: - Quarter1 (April-June) 1400 MT; Quarter 2 (July – September) 800 MT; Quarter 3 (October - December) 3300 MT and Quarter 4 (January – March) – 2500 MT.

At the beginning of quarter 1, there is No inventory and 50 workers are employed. The productivity is 0.5 MT per worker per day. Each quarter has 80 working days. The cost of hiring is Rs. 20,000 per worker and cost of Layoff is Rs. 30,000 per worker. The inventory carrying cost is Rs. 1000 per MT per quarter. Two options are proposed, either manage with inventory or vary the work force. Develop an optimum plan for “Glorious Paints Limited”. **(8 Marks)**

Q4. Explain Selective Inventory control techniques with one business application of each technique. **(8 Marks)**

Q5. Explain 5 “R” of purchasing with one business example of each “R”. **(8 Marks)**