

GUJARAT TECHNOLOGICAL UNIVERSITY
MBA (PART TIME)– SEMESTER 3– WINTER EXAMINATION – 2018**Subject Code: 3539904****Date: 6/12/2018****Subject Name: Production & Operations Management****Time: 10:30am To 1:30pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** 1. Define: Operation System **14**
2. Write down the design principles.
3. Write down formula of Throughput time & Throughput ratio.
4. What is cycle time?
5. What is process capability study?
6. What is Yield Management?
7. What are the elements of MRP?
- Q.2** (a) What is commercialization? **07**
(b) What is vertical integration? **07**
- OR**
- (b) How are location and transportation of products related to each other? **07**
- Q.3** (a) Mention the important features of product layout. **07**
(b) What are the benefits of MRP system? **07**
- OR**
- Q.3** (a) Following table shows the various activities for the project. Draw Network Diagram for the project. **07**

Task	Required Predecessor
A	--
B	--
C	--
D	A
E	B
F	B
G	C
H	D,E
I	F,G
J	H,I

- (b) Following table shows the various activities for the project. Draw Network Diagram for the project. 07

Task	Required Predecessor
A	--
B	A
C	A
D	A
E	A
F	B,C
G	F,D,E
H	E
I	F
J	I,G,H

Q.4

CASE STUDY:

Suzuki Motorcycle Limited

Every Suzuki motorcycle has a unique frame number and a unique engine number. Once these numbers are paired, they define the identity of the motorcycle and hence they must always stay together. But some engines have to be dismounted from their frames and sent for repairs after they have been paired at the invoicing stage. The company relied on a manual process to recombine the frame and the engine, and it often happened that an engine was mounted on a wrong frame. In terms of performance, there is no problem with the bike whose frame number and engine number do not match, but the owner can not register it.

The engines and the frames had barcodes on them, but they were not used in the production process. The invoice team used them in coupling an engine to a frame. The company decided that barcodes would be used in the manufacturing process and a scanner was provided at the point when an engine was mounted on a frame. Scanners were also provided to operators who remounted the engines on the frames. The operator scans the engine's barcode and then puts it on the right frame.

- (a) What problem did the company face? 07
 (b) How did it solve the problem? 07

OR

- Q.4** (a) What else could it have done? 07
 (b) What is an alternate to the scanner system? 07

TVS Motor Company

TVS Motor Company is the third largest two-wheeler company in India and is among the top ten in the world. The company exports its vehicles unassembled to reduce shipping costs. It was facing problems in the order-fulfillment process. The order-fulfillment process was entirely manual without any control integrated into the process and the employees walked through the company's warehouse fulfilling each order. The process resulted in missing or mismatching parts, and the company had to incur extra costs to reship the correct parts. The company lacked visibility of its packing, and shipping processes, and it could not track the orders to final delivery. Its operating expenses were very high, and a large number of employees were required to fulfill orders.

The company has been using SAP ERP, and it decided to customize it to improve its order-fulfillment process. It integrated barcode and wireless technology with the sales and distribution function of SAP ERP. It developed a cart that houses a scanner, a barcode printer, and a weighing scale that communicates wirelessly with SAP ERP. Each part's exact location is transmitted to the cart, and hence employees do not waste time looking for them. Employees do not now count the parts such as nuts and bolts that are shipped in quantity. The parts are weighed on the cart's scale, and when the predetermined weight is reached, a barcode sticker is generated. SAP ERP also ensures that orders are optimally packed and arranged in shipping containers to maximize utilization of space and reduce freight costs. The company was able to eliminate missing and mismatched parts in its export orders and since SAP ERP provides full traceability of international shipment, it can address customer order inquiries quickly. Productivity has improved dramatically. Earlier an employee walked 9.6 KM to fulfill 90 order, but now he has to walk just 40 meters to fulfill the same order.

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|--|----|
| (a) What is the application of MRP in this case? | 07 |
| (b) What problem did the company face? | 07 |

OR

- | | |
|---------------------------------------|----|
| Q.5 (a) How did it solve the problem? | 07 |
| (b) What else could have been done? | 07 |
