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Q 1 A) Fill in the Blanks (Any 8)		Q 1 B) Match the Column (Any 7)		
Sr. No.	Answers	Sr. No.	Ans.	Answers
1	Production	1	D	Crude Oil & Sugar
2	Product Design	2	C	Paints & Vehicles
3	Productivity	3	F	For American Company
4	International	4	G	For Japanese Company
5	Material handling	5	B	Failure Cost
6	EOQ	6	A	Appraisal Cost
7	Plant layout	7	E	Based on Nature of Supplier
8	Quality	8	J	Based on Problem of Procurement
9	Six Sigma	9	H	Minimize Waste
10	Taguchi	10	I	To change for better
Q 2 A)	Define Production Management. Discuss the Components of Production Management. Definition/ meaning of Production Management. (2 Marks) Components: Planning, Organising, Controlling. (6 Marks)			08
B)	Explain the characteristics of a good product design. Function, Reliability, Maintainability, Predictability, Simplification, Product Standardisation, Minimum Cost, Variety, Performance, Aesthetic Feature, Availability. (1 Mark for each point)			07
OR				
C)	Define Six Sigma. Explain the DMAIC & DMADV methodology in brief. Definition/ Meaning of Six Sigma. (1 Mark) DMAIC: Define, Measure, Analyse, Improve, Control. (3.5 Marks) DMADV: Define, Measure, Analyse, Design, Verify. (3.5 Marks)			08
D)	Discuss in brief procedure for registration for ISO certification. Steps : Top Management Commitment, Assigning Responsibilities & Training Personnel, Prepare Quality Policy manual, Educating Staff, Preparing Operating Procedure, Documentation, Internal Audit, Appointment of Registrar, Final Audit, Closing Meeting & Issue of Certificate. (7 Marks)			07
Q 3 A)	Explain in brief various types of Material handling Equipments. Wheel Borrows, Hand Trucks, Trolleys, Conveyors, Hoists & Cranes. Brief Explanation. (8 Marks)			08
B)	Explain the objectives of Materials Management. Obj.: Low Price, high Inventory Turnover, Low cost of acquisition & possession, Continuity of Supply, Consistency of Quality, Maintenance of Good Buyer Seller Relations, Development of new material & vendor, Procedures, Operational Expenditure, future Forecast, Standardization, Development of Personnel, Good record keeping & quick reporting, Make or buy decision. (1 Mark for each point)			07
OR				
C)	Define Quality. Explain the characteristics of Quality. Definition/ Meaning of Quality. (1 Mark) Characteristics: Specification, Standard, Quality of Design, Quality of Conformance, Quality of Performance, Structural, Sensory, Time oriented, Ethical, Variable, Non Conformity, Attribute. (7 point, 1 Mark each)			08
D)	Discuss the service dimensions of Quality. Tangible, Reliability, Responsiveness, Communication, Credibility, Security, Competence, Courtesy, Understanding, Access. (1 Mark each)			07

Q 4 A)	Explain in brief any 4 Inventory Control Techniques. ABC Analysis, XYZ Analysis, VED Analysis, FSN Analysis, HML Analysis, SOS Analysis, GOLF Analysis, SDE Analysis. (4 types, 2 Marks each)	08
B)	What are the types of Plant Layout? Process/ Functional/Job Shop layout, Product/Line Processing/ Flow line Layout, Fixed/ Static Layout, Cellular Layout, Combined/Hybrid Layout, Service Facility layout. Brief Explanation.	07
OR		
C)	Explain Taguchi's Quality Engineering. Introduction, Principal Contribution, Offline Quality Control, Design of Experiments. Taguchi's Seven Point (Offline Quality Control)	08
D)	Explain Edward Deming's Philosophy & approach to Quality. Introduction, PDCA Cycle, 14 point for Quality Management.	07
Q 5 A)	EOQ : 1200 Units (2 Marks) Total Cost: Rs. 18,15,000 (3 Marks) Revised Total Cost: Rs. 16,55,250 (3 Marks) Total Cost : $DP + (D/Q) C_o + (Q/2)PC_i$ (D= Annual Demand, Q = EOQ units, P= Unit cost, C _o = Ordering Cost , C _i = Inventory Cost)	08
B)	Partial Productivity of Labour : 6.67 Times Partial Productivity of Capital: 5 Times Partial Productivity of Raw Material : 5.71 Times Partial Productivity of Electricity : 20 Times Partial Productivity of Other Misc. Expenses : 40 Times Total Productivity : 1.67 Times (Partial Productivity : 1 Mark each , Total Productivity : 2 Marks)	07
OR		
C)	Write a Short Notes : (Any 3) 1. 1 Quality Circle 2. Lean Thinking 3. Production System 4. Deming's Application Prize 5. Ishikawa Fish Bone Diagram (Marks can be given based on contains written by students.)	15