Paper I.D. 22140

MASTER OF TECHNOLOGY IN MECHANICAL ENGINEERING (2nd Sem.)
(INDUSTRIAL & PRODUCTION ENGINEERING)
MTIP–618 OPERATIONS MANAGEMENT

Time: 3.00 Hrs, **Max. Marks: 60**

Note: All questions carry equal marks. Question No. 1 is compulsory and attempt any one from each unit.

Sr. No.	Question detail	Marks
Q1.	i). JIT does not believe in a) Quality b) Over production c) Human relations d) All of the above ii). Just-In-Time aimed at a) Zero inventories b) Reduced manpower c) Over production d) All of the above iii). Which of the following is true for supply chain management? a) The physical material moves in the direction of the end of chain b) Flow of cash backwards through the chain c) Exchange of information moves in both the direction d) All of the above iv). Customer Relationship Management is about a) Acquiring the right customer b) Instituting the best processes c) Motivating employees d) All of the above v). What problems are associated with reengineering? a) Hiring a new set of workers with new skills is required. b) It is expensive in the short term and can lead to chaos in transition. c) It almost always fails to work effectively. d) Employees are required to work a lot harder.	1X12= 12

vi). What is at the heart of any ERP system?

a) Information

b) Employees

c) Customers

d) Database

vii). Which of the following occurs when everyone involved in sourcing, producing, and delivering the company's product works with the same information?

a) Eliminates redundancies

b) Cuts down wasted time

c) Removes misinformation

d) All of the above

viii). Problem of solid waste disposal can be reduced through

a) recycling

b) lesser pollution

c) more timber

d) population control

ix). Productivity =

a) 1+ (Profit/Cost)

b) 1+ (Cost /Profit)

c) 1- (Profit/Cost)

d) 1- (Cost /Profit)

x). Which of the following is true for supply chain management?

a) The physical material moves in the direction of the end of chain

b) Flow of cash backwards through the chain

c) Exchange of information moves in both the direction

d) All of the above

	xi). Which of the following is a reason for ERPs explosive growth? a) ERP is a logical solution to the mess of incompatible applications b) ERP addresses the need for global information sharing and reporting c) ERP is used to avoid the pain and expense of fixing legacy systems d) All of the above xii). What does a reengineered company tend to give it's workers? a) Increased pay and benefits. b) Healthy work environment. c) Increased job security. d) More power to make decisions and higher responsibility.	
	UNIT-I	
Q.2.	Explain Production management, its types and life cycle approach of it.	12
Q.3.	a) Differentiate MRP and JIT.	6
	b) Discuss Production scheduling.	6
	UNIT- II	
Q.4.	Explain VRM and CRM in detail.	12
Q.5.	Discuss Supply chain management, its importance, objectives and applications.	12
	Unit-III	
Q.6.	How can choose the process to re-engineer, success factors and advantages.	12
Q.7.	a) What is Re-engineering and its characteristics?	6
	b) Explain Re-engineering opportunities for an organization.	6
	UNIT-IV	
Q.8.	Discuss Characteristics, approaches & methodology for implementation of ERP.	12
Q.9.	Discuss classification of waste & systematic approach to waste reduction.	12

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M. TECH. 2ND SEMESTER, MECHANICAL ENGINEERING

(INDUSTRIAL & PRODUCTION ENGINEERING)

(MTIP-606) ADVANCED METAL CASTING

Time: 3.00 Hrs, Max. Marks: 60

Note: Question one is compulsory. Attempt four questions from others, at least one question from each unit. All questions carry equal marks.

Sr. No.	Question detail	Marks
Q.1.	(a). Explain types of runner. (b). Explain different types of riser. (c). Explain different types of gating system. (d). What is pouring basin in casting? (e). What is slag-inclusion? (f). What is pouring temperature?	2x6
	UNIT-I	
Q.2.	Discuss in brief the influence of clay content and percentage of tempering water on the strength of a moulding sand.	12
Q.3.	Explain the following terms: (a). Permeability. (b). Compact ability. (c). Mould ability. (d). What is directional solidification?	12
	UNIT-II	
Q.4.	What is solidification? Explain the process of directional solidification in metal casting.	12
Q.5.	Define the following terms: (a). Rate of solidification. (b). Segregation. (c). Fluidity. (d). Mouldability.	12

	UNIT-III	
Q.6.	What is riser? Explain the various essential conditions that are to be kept in mind while designing risers?	12
Q.7.	Calculate the riser diameter for an annular cylinder of 30 cm outside diameter, 10 cm inside diameter and 30 cm height.	12
	UNIT-IV	
Q.8.	What is casting defect? Explain various tests used for the testing of different testing defects.	12
Q.9.	What is centrifugal casting? Also explain the types of centrifugal casting with their applications.	12

Paper ID - 22128

M. Tech Mechanical Engineering 2nd Semester Examination
(INDUSTRIAL & PRODUCTION ENGINEERING)
Subject- MECHATRONICS
Paper Code- MTIP–602

Max. Marks-60 Time- 3 Hr

Note- All questions carry equal marks. Question 1 is compulsory. Attempt one question each from Unit I to Unit IV

1. Briefly explain the following
   (a). NAND Gate
   (b). Pressure control valve
   (c). Pressure intensifier
   (d). Regulator
   (e). Data transfer instructions
   (f). Digital module

Unit I

2. Enumerate and explain briefly the elements of a mechatronic system.

3. What are the various types of number systems? Convert (a) 4161_8 into binary and (b) 206.104 into its decimal equivalent number.

Unit II

4 What is a 'hydraulic motor'? How are hydraulic motors specified or rated? Explain briefly the different types of hydraulic motors.

5. What do you mean by pressure intensifier? Explain briefly it's all types?

Unit III

6. Enumerate various types of pneumatic valves and explain briefly it's all types.

7. Discuss briefly the flow control valves.

Unit IV

8. Give the description of a typical full-featured micro-controller. Describe briefly the 8051 microcontroller.

9. Explain briefly with a neat diagram, the Architecture of a programmable logic controller (PLC).

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M. TECH. 2ND SEMESTER, MECHANICAL ENGINEERING

(INDUSTRIAL & PRODUCTION ENGINEERING)

(MTIP-604) TOOL ENGINEERING

Time: 3.00 Hrs, Max. Marks: 60

Note: Question one is compulsory. Attempt four questions from others, at least one question from each unit. All questions carry equal marks.

Sr. No.	Question detail	Marks
Q.1.	(i). What is the full form of CBN? (ii). What are the percentage compositions of different materials in T-series of high speed steel? (iii). What are the selection parameters for Cutting Tool materials? (iv). Define chip breakers. (v). What is single point cutting tool? (vi). Explain different types of fixtures used in Boring. (vii). What is meant by tool presetting? viii). What is tool length compensator in N/C machines? (ix). How the term fixture was derived? (x). What is ment by red hardness? (xi). What is tool reconditioning? (xii). What is the principle of work holding device?	1x12
	UNIT-I	
Q.2.	What is cutting tool? Explain the basic requirements and the design parameters of reamer tool?	12
Q.3.	Define the principle of chip formation. Also name and describe the three basic types of chips.	12
	UNIT-II	
Q.4.	What is gauge? Explainthe the important properties of materials from which gauges are manufactured?	12
Q.5.	What are the seven basic elements of workpiece geometry that gauges are designed to checck?	12

	UNIT-III	
Q.6.	Define defferent types of drill jigs? What are the general design considerations of designing of the drill jigs?	12
Q.7.	What is jig and fixture? Explain the major differences between jigs and fixtures?	12
	UNIT-IV	
Q.8.	What is the most common and least complicated method of tool presetting?	12
Q.9.	What type of tap holder is used on N/C machines that do not have provision for adjusting the feed rate to accurately match the lead of the tap?	12

S.No. 18044

M.Tech. (Computer Engineering), Second Semester, May 2018
Knowledge & Discovery Management

Time: 3 Hours Max. Marks:80

Note: *Question No. 1 is compulsory. Attempt four more questions selecting one question from each unit.*

Q. 1 (8x3)

i. Define the term knowledge edge in detail.
ii. What do you understand by complete chain from data, information to knowledge?
iii. What do you mean by Return on investment (ROI)?
iv. What is the difference between Data and Knowledge?
v. Differentiate between the facts and rules in context of knowledge management system.
vi. Define search engine? Explain the various types of such engines.
vii. Differentiate between data mining and data warehouse.
viii. What do you mean by convergent technologies?

UNIT-I

Q. 2 (a) Describe the relationship between data, information and knowledge as relates to knowledge management system. (8)

(b) What do you mean by expert system? Explain the different components of expert system in detail. (6)

Q. 3 (a) Explain the various knowledge management techniques in detail. (7)

(b) What do you understand dissemination technologies? Explain in detail. (7)

UNIT-II

Q. 4 (a) What do you mean by convergence technologies? Explain the various factors which are responsible for present development. (8)

(b) Explain the role that internet plays in relation to knowledge transfer. (6)

Q. 5 (a) Explain the knowledge discovery process used in knowledge management system. (8)

(b) Describe the knowledge representative issues for knowledge management system. (6)

UNIT-III

Q. 6 (a) What do you mean by K-gap analyzer? Explain the role of it's as a tool. (8)

(b) Differentiate between infrastructure evaluation and leverage evalution. (6)

Q. 7 Describe knowledge management system (KMS) development process in detail. Also explain review and measuring Return on Investment (ROI). (14)

UNIT-IV

Q. 8 (a) "Changing Lives Everywhere". Comment. (8)

(b) What are the different knowledge management way? Explain in detail. (6)

Q. 9 Write short notes on the following:

(a) Smart Schools (7)

(b) Virtual Universities (7)

(10)

S.No. 18043

M.Tech. (Computer Engineering), Semester-II, May 2018

Distributed Operating System

Time: 3 Hours Max. Marks:80

Note: *Question No. 1 is compulsory. Attempt four more questions selecting one question from each unit.*

Q. 1 (8x3)

i. What do you mean by an open system? Explain.
ii. Define event triggered real time system.
iii. Name two properties that immutable files have.
iv. What is the difference between MIMD and SIMD computer?
v. Name five transactin primitives.
vi. What is the function of stubs generated at the client side and the server side?
vii. What are consistency models?
viii. Define network operating system.

UNIT-I

Q. 2 (a) What is distributed system? What are the various design issues? Explain. (10)
(b) What do you mean by group communication? (4)

Q. 3 (a) What are the desirable features of a message passing system? (6)
(b) Define operating system. Explain the various types of operating system in detail. (8)

UNIT-II

Q. 4 (a) What is Remote Procedure call (RPC)? Explain the security issues of RPC? (7)
(b) What are the consistency models? Explain. (7)

Q. 5 (a) What is Deadlock? How it can be handled in distributed system? Explain. (7)
(b) What are the different clock synchronization algorithms in distributed system? Explain. (7)

UNIT-III

Q. 6 (a) Explain shared variables in distributed shared memory in detail. (6)
(b) Why Election Algorithm is needed? Explain Bully algorithms with an example. (8)

Q. 7 (a) What are the advantages offered by object based distributed shared memory? Explain it in detail. (8)
(b) Explain load balancing approach in brief. (6)

UNIT-IV

Q. 8 (a) Explain process migration in distributed ioperating system in detail. (10)
(b) List the various file caching schemes in distributed operating system? (4)

Q. 9 Write short notes on the following:
(a) File replication (7)
(b) File accessing models (7)