Student Exam No._____

GANPAT UNIVERSITY

B. Tech. Sem. IV Mechanical Engineering

CBCS Regular Examination May – June 2013

2ME406 Manufacturing Technology

Time: 3 Hours / As per Scheme **Total Marks: 70**

Instruction: 1. Attempt all questions.
2. Assume suitable data if necessary.
3. Figures to the right indicate full marks.

Section – I

Que. – 1	(a)	What are pattern allowances? Describe and explain any three in detail.	04
	(b)	Draw a neat sketch and explain following pattern: (i) Cope and drag pattern (ii) Segmental pattern (iii) Follow board pattern	04
	(c)	Explain role and importance of mould ingredient in mould making.	04
		OR	
Que. – 1	(a)	Explain CO_2 moulding along with its advantages and limitations.	04
	(b)	Enlist advantages, limitations and applications of pressure die casting.	04
	(c)	Explain with neat sketch shell moulding process.	04
Que. – 2	(a)	Differentiate between top and bottom gating system.	04
	(b)	Differentiate between single gate and multiple gating system.	03
	(c)	Differentiate between pressurized and and unpressurized gating system.	04
		OR	
Que. – 2	(a)	Explain any two sand testing methods.	04
	(b)	Differentiate between Directional and progressive solidification.	03
	(c)	Enlist and explain function of riser.	04
Que. – 3		Write short notes on any three of following: (a) Centrifugal casting (b) Casting defects (c) Induction furnace (d) Core making (e) Moulding sand characteristics	12

Section – II

Que. – 4	(a)	Describe briefly various parts of capstan and turret lathes.	04
	(b)	What is a mandrel? Why they are used in lathes? List different types of	04
	(c)	Explain why back gears are used in cone pulley type of head stock and showing location of different parts.	04
		OR	
Que. – 4	(a)	Enlist the working of turret indexing mechanism with suitable neat sketch and discuss why it is required in turret lathe?	04
	(b)	Define taper. How is the amount of taper expressed? Name different methods of taper turning done on a center lathe drawing simple sketches?	04
	(c)	What is feed? Explain various types of feed on lathe machine and also discuss tumbler gear mechanism.	04
Que. – 5	(a)	Write short notes on the following: (i) Lathe saddle (ii) Cross slide (iii) Tool post (iv) Compound rest	04
	(b)	Explain advantages of hydraulic shaper over crank and slotted lever shaper.	03
	(c)	Differentiate between shaper and planer.	04
		OR	

Que. – 5 (a) Explain with schematic diagram the principle of thread cutting on a lathe. Find out the relation between ratio of change gears to the work pitch and lead screw pitch. The pitch of a lead screw is 6 mm, and the pitch of the thread to be cut is 1.25 mm. Find the change gear. 04

(b) Explain work holding devices in milling machine. 04

(c) Define the following terms in milling machine 03
(i) Cutting speed (ii) Feed (iii) Depth of cut

Que. – 6 **Write short on following: (Any three)** 12

(a) Centerless grinding machine
(b) Applications of broaching machine
(c) Guides and guide way
(d) Surface finishing operations

END OF PAPER