CLASS: B.TECH   SEMESTER : III
BRANCH: MECHANICAL   SESSION : MO/19

SUBJECT: PE213 MANUFACTURING PROCESS

TIME: 3 HOURS   FULL MARKS: 50

INSTRUCTIONS:
1. The question paper contains 5 questions each of 10 marks and total 50 marks.
2. Attempt all questions.
3. The missing data, if any, may be assumed suitably.
4. Before attempting the question paper, be sure that you have got the correct question paper.
5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.

Q.1(a)	Define the following terms as used in sand mould casting: core, core-print, pouring basin, sprue, sprue well, runner, gate, riser, bars and gaggers, soldiers, cope, drag and cheek.	[5]
Q.1(b)	With the help of diagram, discuss the "Lost wax method".	[5]
Q.2(a)	In a production turning operation the workpiece is 125 mm in diameter and 300 mm long feed of 0.225 mm/rev is used in the operation if cutting speed was kept 3 m/s, the tool was changed after every five parts but if cutting speed was kept 2 m/sec. the tool can reduced 25 parts. Determine the Taylor tool life equation for this job.	[5]
Q.2(b)	Sketch a single point cutting tool and show on it the various tool elements, tool angles and ASA system.	[5]
Q.3(a)	Name the various operations that can be performed on a centre lathe. Describe, briefly, the following operations: (i) Facing; (ii) Plain turning (iii) Taper turning (iv) Drilling, and (v) Threading	[5]
Q.3(b)	A 20 × 5 cm CI surface is to be faced on a milling machine with a cutter having a diameter of 10 cm and having 16 tooth for the cutting speed and feed are 50 m/min and 5 cm/min respectively, determine the milling time, rpm, and feed/tooth.	[5]
Q.4(a)	Define rolling process, and 4mm thick sheet is rolled with 300 mm diameter roll to reduce thickness without and change in its width. The friction coefficient at the work roll interface is 0.1. Find out minimum possible thickness of the sheet that can be produced in a single pass.	[5]
Q.4(b)	Define recrystallization phenomenon and its effect on physical properties of a material and grain structure how can the effect of recrystallization removed. Also explain the recovery and grain growth phenomenon.	[5]
Q.5(a)	How the welding is classified? Explain them briefly.	[5]
Q.5(b)	Sketch and describe the principle of submerged arc welding.	[5]

:::::04/12/2019:::::M