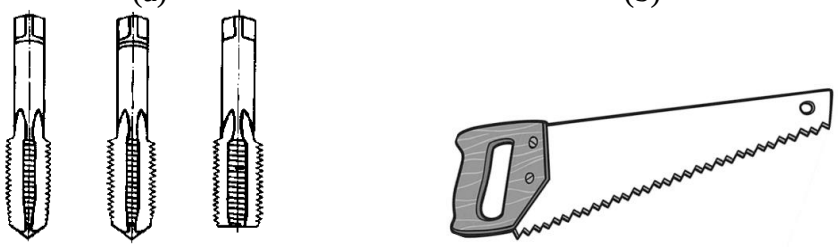
Name: **Enrolment No:**	UPES UNIVERSITY WITH A PURPOSE

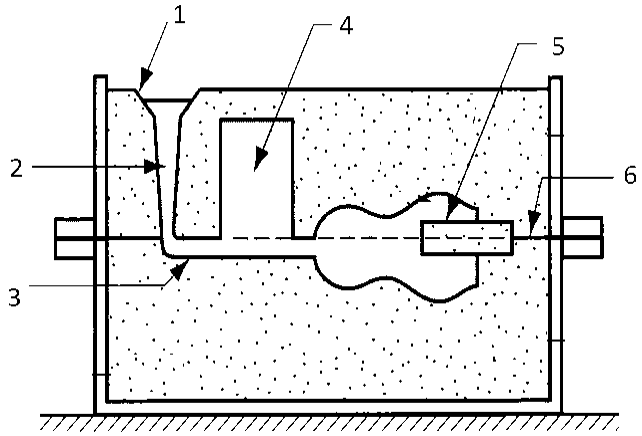
UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, December 2019

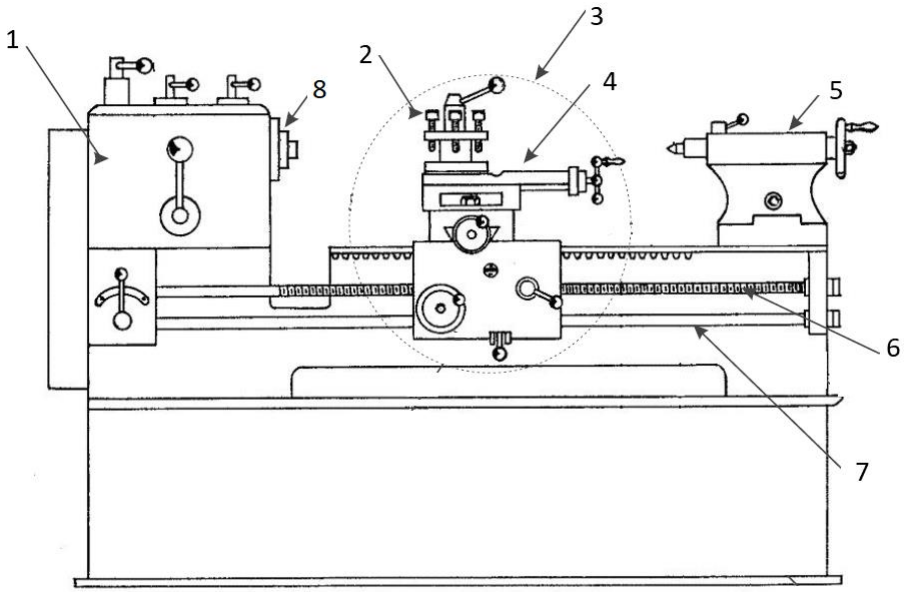
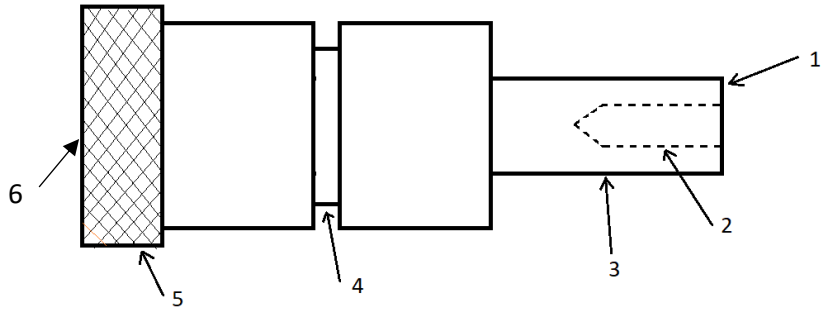
Course: Workshop Practices **Semester: I**
Program: B. Tech-APEG, APE-UP, CE+RP, Mechanical **Time 03 hrs.**
Course Code: MEPD1002 **Max. Marks: 100**

Instructions: Internal choice in Q9 and Q12. Do not over-attempt.

SECTION-A

S. No.		Marks	CO
Q 1	(a) (b)  Identify the hand tools (a) and (b) as shown above. Also mention what each of these tools is used for.	2+2	CO2
Q 2	*Hot working is carried out at temperatures above the recrystallization temperature.* Briefly describe the changes that occur in the material at recrystallization temperature.	1x4	CO1
Q 3	Briefly describe the different between fusion and non-fusion welding processes along with one example of each process.	2+2	CO1
Q 4	Using schematic diagrams, show the roll configuration for a 3-high rolling mill and tandem rolling mill.	2+2	CO1
Q 5	Name the processes suitable for manufacturing following products: a) Hammer heads b) Aluminium bar with circular cross-section c) Engine casing d) Flat steel sheet with 3 mm thickness	1x4	CO1
	SECTION-B		
Q 6	Compare the advantages and disadvantages of hot working processes with cold working processes.	4+4	CO1

Q 7	a) Define forgeability. b) With the help of schematic diagrams,illustrate the open die forging and closed die forging. c) Mention any two materials used for making dies in extrusion/drawing processes.	2 2+2 2	CO1
Q 8	a) Figure below is a representation of cope and drag mould used in foundry practice. Label the parts 1-6 as shown in the figure.  b) Briefly discuss why cores are used in mould making.	1x6 2	CO1
Q 9	**Answer <u>any two</u> of the following:** a) Briefly discuss why distortion allowance and machining allowance are provided in patterns. b) Mention any four properties required in moulding sand. c) Briefly describe the appearance (with the help of schematic diagram) and reasons for formation of following defects in cast products: (i) misrun and (ii) mould shift	 2+2 1x4 2+2	CO1
Q 10	a) With the help of a detailed schematic diagram, describe the abrasive water jet machining process. b) Mention the various parameters that are used to control the abrasive water jet machining process.	5 3	CO4
	SECTION-C		
Q 11	a) Draw a schematic diagram to show the setup used for electric arc welding (EAW) process. b) Briefly discuss the MIG (Metal Inert Gas) and TIG (Tungsten Inert Gas) welding processes using schematic diagrams. c) Discuss the different types of flames used in gas welding process.	8 3+3 6	CO1

Q 12	a) Label the various parts (1-8) of lathe machine as shown in the figure below: Note: Part no. 3 represents a collection of different components lying inside the marked circle.  **Answer <u>any two</u> of the following:** b) Fig. below represents a job prepared from a uniform solid cylinder using lathe machine. Name the five machining operations (1-6), as indicated in figure, that have been carried out for preparing this job.  c) Briefly discuss the difference between a 3-jaw chuck and 4-jaw chuck. d) Define the following parameters with respect to machining operation on a lathe machine: Cutting speed, Feed rate and Depth of cut.	1x8 1x6 6 6	CO1