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UPES
End Semester Examination, May 2023

Course: Workshop Practices **Semester: II**
Program: B.Tech – ADE, ASE, Mech, MEX, ECE, Elec. & Comp. Engg. **Time: 03 hrs.**
Sustainability, Food Tech. Bio Tech.
Course Code: MEPD1003 **Max. Marks: 100**

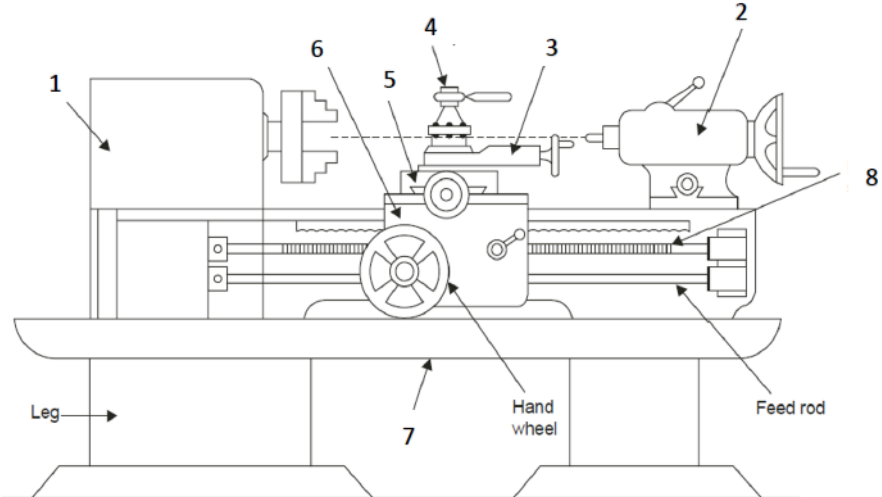
Instructions: Q 7 and Q 10 have internal choice.

SECTION A
(5Qx4M = 20 Marks)

S. No.		Marks	CO
Q 1	Identify the tools shown below: <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  (a) </div> <div style="text-align: center;">  (b) </div> </div> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 20px;"> <div style="text-align: center;">  (c) </div> <div style="text-align: center;">  (d) </div> </div>	4	CO2
Q 2	Briefly discuss two methods for seasoning of timber.	4	CO1
Q 3	Explain the processes of nibbling and lancing as applicable to sheet metal working.	4	CO1
Q 4	Briefly discuss four advantages of hot working process.	4	CO1
Q 5	Enlist and briefly explain the components of the gating system of a sand-casting process.	4	CO1

SECTION B
(4Qx10M = 40 Marks)

Q 6	a) Explain four properties of moulding sand.	4+6	CO1
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	b) Explain different pattern allowances with necessary sketches if applicable.		
Q 7	<p>Explain the process of EDM (Electrical Discharge Machining) with a schematic diagram. Enlist three advantages and three disadvantages of the process.</p> <p style="text-align: center;">OR</p> <p>Explain the process of LBM (Laser Beam Machining) with a neat sketch. Discuss its applications and advantages.</p>	7+3	CO4
Q 8	Explain the process of drawing with a schematic diagram. Explain how this process can be used to make seamless tubes.	5+5	CO1
Q 9	<p>a) Name and explain different types of fits.</p> <p>b) Tolerances for a hole and shaft assembly having a nominal size of 50 mm are as follows:</p> <p style="text-align: center;"><i>Hole</i> = $50^{+0.02}_{+0.00} \text{ mm}$ <i>Shaft</i> = $50^{-0.05}_{-0.08} \text{ mm}$</p> <p>Determine the allowances, tolerances and deviations. Determine the type of fit.</p>	3+7	CO1
SECTION-C (2Qx20M = 40 Marks)			
Q 10	<p>a) Describe the different types of electric resistance welding with the help of neat sketches.</p> <p>b) Describe the advantages and disadvantages of welded joints over other joints.</p> <p>c) Mention the reasons of coating provided on electrodes. Mention the composition of flux used for coating the electrodes in EAW.</p> <p style="text-align: center;">OR</p> <p>a) Explain the process of TIG welding with a neat sketch. Explain the advantages of using inert gas for shielding over flux in TIG welding.</p> <p>b) Explain six different types of defects that may occur in welding.</p> <p>c) Discuss the different types of flames used in gas welding process.</p>	8+6+6	CO2 CO1
Q 11	<p>a) Label the various parts (1-8) of lathe machine as shown in the figure below:</p>  <p>b) Explain the different types of feeds used on a lathe machine.</p> <p>c) Explain briefly the working of a 3D printer. Enlist three advantages of 3D printers over traditional machining processes.</p>	8+6+6	CO2 CO4