

Q 4	<p>Identify the metal-forming processes shown in below images:</p>	CO1
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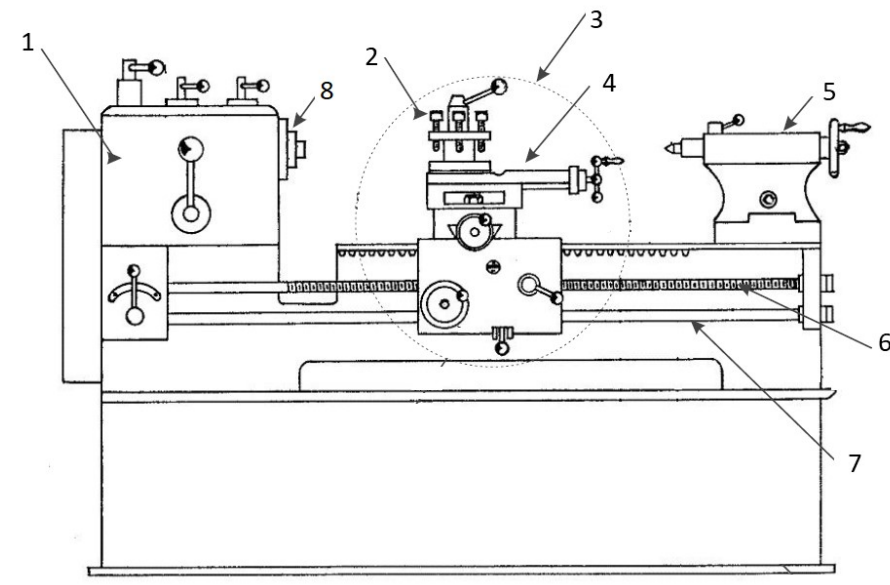
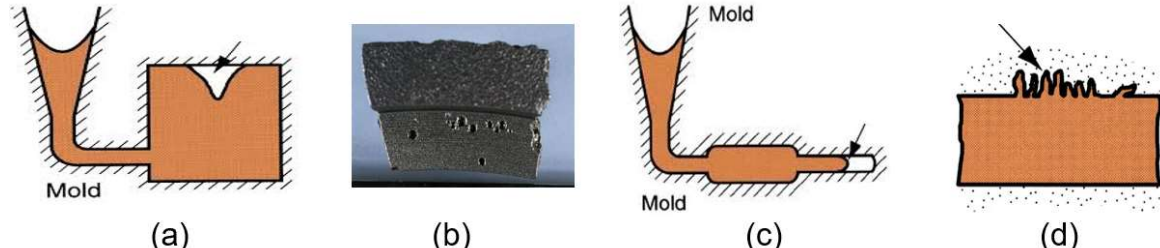
b) _____, b) _____, c) _____, d) _____, e) _____

Q 5	<p>Name the process suitable for manufacturing each of the following products:</p> <p>a) Chisels: _____</p> <p>b) Steel bar with hexagonal cross-section: _____</p> <p>c) Engine Casing: _____</p> <p>d) Copper wire with 1 mm diameter: _____</p> <p>e) Steel sheet of 2 mm thickness: _____</p>	CO1
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Q 6	<p>Figure below is a representation of cope and drag mould used in foundry practice. Label the parts 1-5 as shown in the figure.</p> <p>1. _____, 2. _____, 3. _____, 4. _____, 5. _____</p>	CO1
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SECTION-B : Total 50 marks
Each question carries 10 marks

Q 7	<p>a) Briefly discuss why the seasoning of wood is carried out? (5 marks)</p> <p>b) What are the advantages of additive manufacturing as compared to machining? (5 marks)</p>	CO1
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<p>Q 8</p>	<p>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. (8 marks)</p>  <p>b) Briefly discuss the role of cross-slide in lathe machine. (2 marks)</p>	<p>CO4</p>
<p>Q 9</p>	<p>a) Identify the following defects in cast products: (4 marks)</p>  <p>(a) (b) (c) (d)</p> <p>b) Briefly describe the following type of patterns (along with a schematic sketch) (i) split pattern, (ii) match plate pattern, and (iii) gated pattern (6 marks)</p>	<p>CO1</p>
<p>Q 10</p>	<p>Answer the following:</p> <p>a) The moulding sand must have good refractoriness and permeability. Why are these properties required in a moulding sand?</p> <p>c) Briefly discuss how hollow sections are created in a cast product. Also mention why chaplets are used in the mould making process. (5 marks)</p>	<p>CO1</p>

Q 11	<p>a) With the help of a detailed schematic diagram, describe the abrasive jet machining process. (6 marks)</p> <p>b) Mention the various parameters that are used to control the abrasive jet machining process. (4 marks)</p>	CO4
SECTION-C		
Q 12	<p style="text-align: center;"><u>Option A: Electric Arc Welding (EAW)</u></p> <p>A.i) Draw a schematic diagram to show the setup used for electric arc welding (EAW) process.</p> <p>A.ii) Briefly discuss the MIG (Metal Inert Gas) and TIG (Tungsten Inert Gas) welding processes using schematic diagrams.</p> <p>A.iii) Briefly discuss following defects in welding: a) Overlap and b) Poor-fusion</p> <p>A.iv) Mention the composition of flux used for coating the electrodes in EAW. Also discuss why electrodes are coated with flux.</p> <p style="text-align: center;">OR</p> <p style="text-align: center;"><u>Option B: Gas Welding, Brazing & Soldering</u></p> <p>B.i) List the fuel used in gas welding process. Briefly discuss the role of oxygen in gas welding process.</p> <p>B.ii) Discuss the different types of flames used in gas welding process.</p> <p>B.iii) Discuss the differences between welding, soldering and brazing.</p> <p>B.iv) Briefly discuss following defects in welding: a) Under-cutting, and b) Cracking</p>	CO2