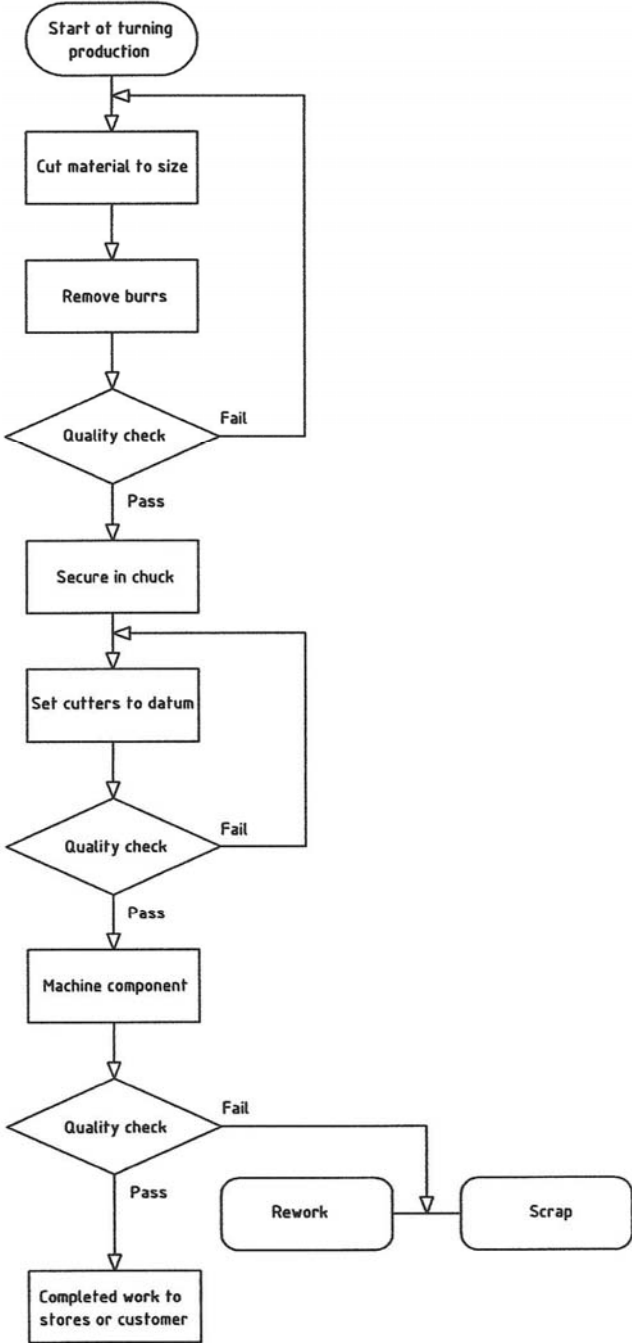


Question	Syllabus reference	Question	Marks
1 Marking guide / answer	01.01	a) Any four from the following: <ul style="list-style-type: none"> • Planning • Quality • Design/drawing office • Purchasing • Maintenance • Manufacturing. b) Suitable description of any two departments named in a).	4 x 1 2 x 2 (Total 8)
2 Marking guide / answer	01.02	a) <ul style="list-style-type: none"> i) Process industries ii) Installation and commissioning iii) Tools and equipment iv) Electrical b) <ul style="list-style-type: none"> i) Medium ii) Heavy iii) Light iv) Light 	1 1 1 1 1 1 1 1 (Total 8)
3 Marking guide / answer	01.03	a) Labour force, output, timescales, cost. b) The manufacturing process that fits each description. <ul style="list-style-type: none"> i) Small batch ii) Mass production iii) One-off or jobbing iv) Repeated batch. 	4 x 1 1 1 1 1 (Total 8)
4 Marking guide / answer	01.04	a) General purpose equipment has a range of uses and dedicated equipment has a specific use. b) Identified as: <ul style="list-style-type: none"> i) General Purpose ii) Computerised iii) Dedicated iv) Dedicated v) General purpose. 	1 1 1 1 1 1 (Total 6)
5	02.01		

Question	Syllabus reference	Question	Marks
Marking guide / answer		<p>a) Thermoplastic can be reheated and used again and thermosetting once formed into a shape cannot be reused.</p> <p>b)</p> <p>i) Non-ferrous.</p> <p>ii) Non-ferrous.</p> <p>iii) Ferrous.</p> <p>iv) Ferrous.</p> <p>c) Description similar to the following.</p> <p>i) The tendency of solid materials to return to their original shape after being deformed.</p> <p>ii) The ability of a material to absorb energy and plastically deform without fracturing.</p>	<p>2</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>2</p> <p>2</p> <p>(Total 10)</p>
6 Marking guide / answer	02.02	<p>Any ten forms of material supply from:</p> <ul style="list-style-type: none"> • Sheet/Plate • Wire • Bar/Rod • Tube • Extrusion • Casting • Forgings • Slab • Block • Film • Granules • Mouldings 	<p>10 x 1</p> <p>(Total 10)</p>
7 Marking guide / answer	02.03	<p>a)</p> <p>i) Studs and nuts</p> <p>ii) Keys</p> <p>iii) Screws (or similar)</p> <p>b)</p> <p>i) Solder</p> <p>ii) Brazing</p> <p>iii) Welding (or similar)</p> <p>c) Similar answer to the following.</p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p>

Question	Syllabus reference	Question	Marks
		<p>A split-pin would fit through a locating hole on the shaft, then bent open, locking the castellated nut in place on the wheel shaft, preventing rotation of the nut.</p> <p>d) Two examples from:</p> <ul style="list-style-type: none"> • Riveting • Brazing • Soldering • Self-secured joints. 	<p>2</p> <p>2</p> <p>(Total 10)</p>
8 Marking guide / answer	02.04	<p>a) Any four factors from:</p> <ul style="list-style-type: none"> • Costs • Availability of materials • Availability of components • Fitness for purpose • Methods of production. <p>b) Descriptions similar to the following.</p> <p>i) Breakeven is a point at which the retrieved value of producing an item (sales etc.) equals the financial outlay for producing that item and is calculated by dividing the fixed costs by the contribution of each unit sold.</p> <p>ii) The real assets of the organisation including, plant, buildings, vehicles and machinery.</p> <p>iii) Inflation is a sustained increase in the general price level of goods and services in an economy over a period of time.</p>	<p>4 x 1</p> <p>2</p> <p>2</p> <p>2</p> <p>(Total 10)</p>
9 Marking guide / answer	03.01	<p>a) Any four from:</p> <ul style="list-style-type: none"> • Materials • Processes • Production sequence • Tools and equipment • Quality Control • Inspection procedures • Health and safety requirements <p>b) Suitable description of any three production requirements named in a).</p>	<p>4 x 1</p> <p>3 x 2</p> <p>(Total 10)</p>
10 Marking	03.02	<p>a) Any two from:</p>	

Question	Syllabus reference	Question	Marks
guide / answer		<ul style="list-style-type: none"> • Production drawings • Quantities • Specifications • Third-party suppliers • Materials • Processing methods 	2
11 Marking guide / answer	03.03	<p>b) The type of material needed (e.g. metal, plastic), the form of supply (e.g. sheet, casting, tube) and the supply location (e.g. stores, supplier). (1 mark for each item and 1 for each example correctly identified).</p> <p>a) Two direct costs:</p> <ul style="list-style-type: none"> • Materials • Production time. <p>b) Suitable description of any one direct cost named in a).</p> <p>c) Any two indirect costs from:</p> <ul style="list-style-type: none"> • Overheads • Lighting • Machine depreciation • Scrap • Rework • Downtime • Advertising • Indirect labour. <p>d) Suitable description of any one indirect cost named in c).</p>	<p>4 (Total 6)</p> <p>1 1</p> <p>2</p> <p>2 x 1</p> <p>2 (Total 8)</p>

Question	Syllabus reference	Question	Marks
12 Marking guide / answer	03.04	 <pre> graph TD Start([Start of turning production]) --> Cut[Cut material to size] Cut --> Burr[Remove burrs] Burr --> QC1{Quality check} QC1 -- Fail --> Cut QC1 -- Pass --> Chuck[Secure in chuck] Chuck --> Set[Set cutters to datum] Set --> QC2{Quality check} QC2 -- Fail --> Set QC2 -- Pass --> Machine[Machine component] Machine --> QC3{Quality check} QC3 -- Fail --> Rework([Rework]) QC3 -- Pass --> Complete[Completed work to stores or customer] Rework --> QC1 Rework --> QC2 Rework --> Scrap([Scrap]) Scrap --> End([End]) </pre>	<p>2 marks for correct use of flowchart symbols, 2 marks for correct labels and arrows, 2 marks for correct content</p> <p>(Total 6)</p>
Total marks			100