

Please check the examination details below before entering your candidate information

Candidate surname

Other names

**Pearson BTEC  
Level 1/Level 2  
First Certificate**

Centre Number

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Learner Registration Number

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**Thursday 9 January 2020**

Morning (Time: 1 hour)

Paper Reference **21174E**

**Engineering**

**Unit 9: Interpreting and Using Engineering Information**

**You must have:**  
Calculator

Total Marks

### Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and learner registration number.
- Answer **all** questions.
- Answer the questions in the spaces provided  
– *there may be more space than you need.*

### Information

- The total mark for this paper is 50.
- The marks for **each** question are shown in brackets  
– *use this as a guide as to how much time to spend on each question.*

### Advice

- Read each question carefully before you start to answer it.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ►

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**Pearson**

Answer ALL questions. Write your answers in the spaces provided.

Some questions must be answered with a cross in a box ☒. If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☒.

1 Engineers use drawings and documentation to show information effectively.

(a) Identify **two** features of a company standardised layout used for engineering drawings.

(2)

- A Finite analysis
- B Title block
- C Paper size
- D Parts list
- E Safety rules

A job card is one type of working instruction used by engineers.

(b) State **two other** types of working instruction used by engineers.

(2)

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(c) Identify **one** electrical circuit characteristic that could be shown on an engineering drawing.

(1)

- A Current
- B Distance
- C Coating
- D Diameter

(d) State **two** types of document that can be used to schedule manufacturing activities.

(2)

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**(Total for Question 1 = 7 marks)**

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2 Engineers refer to a range of different types of information when carrying out manufacturing activities.

(a) Identify the correct name for each of these warning signs.

Draw **one** line from each warning sign to **one** warning sign name.

(2)

**Warning sign**



(Source: © art-sonik/Getty Images)



(Source: © alessandro0770/Getty Images)

**Warning sign name**

Danger of death

Caution

Slippery surface

High voltage

Risk of explosion

(b) Name **one** example of a safe condition health and safety sign.

(1)

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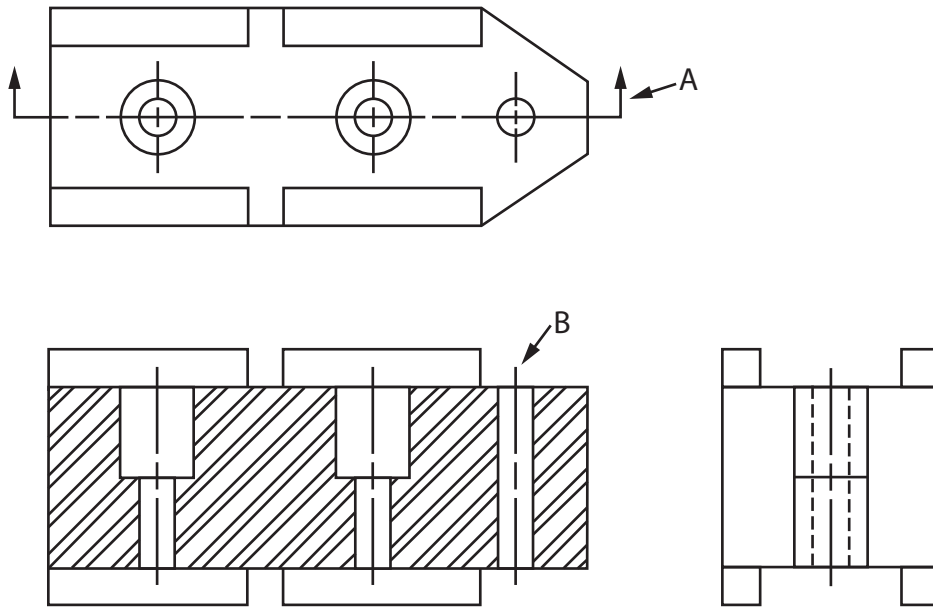
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(c) Figure 1 shows a drawing for an engineered component.



**Figure 1**

(i) Name the linetype indicated by the letter A.

(1)

(ii) Name the linetype indicated by the letter B.

(1)

**(Total for Question 2 = 5 marks)**



3 (a) Identify **two** places where engineering drawings can be stored securely.

(2)

- A Filing cabinet
- B Assembly point
- C ICT system
- D Coolant sump
- E Machine tray

(b) State **two** reasons why electronic components are represented by symbols on circuit diagrams.

(2)

1 .....

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(c) State **two** reasons why damage to engineering drawings should be reported.

(2)

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**(Total for Question 3 = 6 marks)**

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4 (a) Identify **two** reasons for using engineering drawings when repairing/modifying assemblies.

(2)

- A To ensure the correct process is used
- B To ensure the correct transportation is used
- C To ensure the correct parts are used
- D To ensure the correct packaging is used
- E To ensure the correct scale is used

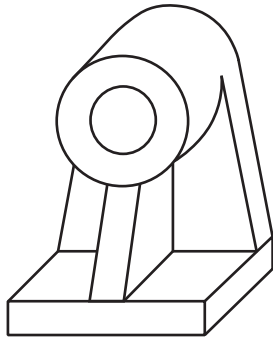
(b) Identify the correct name for each type of drawing.

Draw **one** line from each type of drawing to **one** drawing name.

(2)

Type of drawing

Drawing name



Isometric

Oblique

Orthographic

Perspective

Schematic



(c) Some components are modified by welding parts together.

(i) A welding symbol is shown in Figure 2.



**Figure 2**

Name the type of weld indicated by the symbol in Figure 2.

(1)

- A** Spot
- B** Plug
- C** Bead
- D** Butt

(ii) Explain **one** reason why manufacturers' data for the use of welding rods would need to be used when welding parts together.

(2)

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**(Total for Question 4 = 7 marks)**

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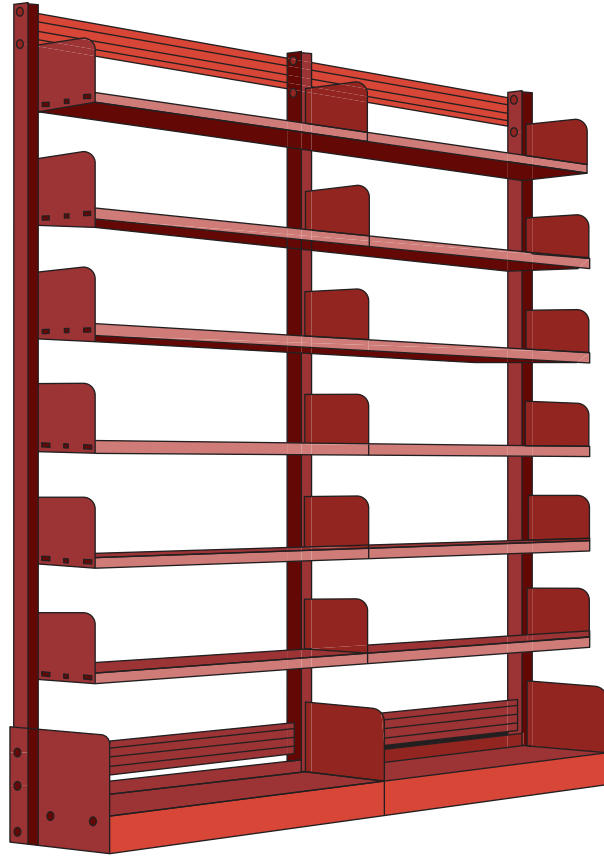
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5 BE9 Engineering manufactures shelving systems that can be used in workshops and garages.

The shelving systems are supplied in kits and are assembled by customers.



(a) State **one** advantage of using job cards when manufacturing parts for the shelving systems.

(1)

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(b) Explain **one** reason why engineers would need to refer to information about bend allowances when manufacturing parts for the shelving systems.

(2)

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(c) BE9 Engineering supplies customers with exploded diagrams of the shelving systems.

Explain **two** advantages to customers of being supplied with an exploded diagram.

(4)

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**(Total for Question 5 = 7 marks)**

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6 SK1 Engineering manufactures customised controllers to be used with game consoles. The game consoles are supplied with a manufacturers' manual.

(a) Explain **one** advantage of SK1 Engineering referring to manufacturers' manuals in this situation.

(2)

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SK1 Engineering does not produce quality control documentation for the customised controllers that it manufactures.

(b) Explain **two** implications for SK1 Engineering of **not** producing quality control documentation.

(4)

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(c) SK1 Engineering uses milestones when scheduling the manufacture of the customised controllers.

Explain **two** advantages of SK1 Engineering sharing scheduled milestones with its suppliers.

(4)

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**(Total for Question 6 = 10 marks)**

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7 WR14 Engineering has manufactured many different versions of a lawn mower over a period of 60 years.

Discuss the reasons why WR14 Engineering uses specific document control methods for its lawn mower engineering drawings and documentation.

Area with horizontal dotted lines for writing the answer.

(Total for Question 7 = 8 marks)

TOTAL FOR PAPER = 50 MARKS

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