



2008 VCE VET Engineering Studies Certificate II GA 2: Examination

GENERAL COMMENTS

Student responses to the 2008 VCE VET Engineering Studies Certificate II examination paper were generally positive and showed improvement on the 2007 examination. In particular, Section C – Using basic engineering concepts to plan the manufacture of engineering components and Section D – Handle engineering materials in a safe and proper manner, were the two areas that students answered most confidently.

The overall area of weakness for most students continues to be Section B – Produce engineering sketches and drawings. Students seemed to have difficulty with correct drawing conventions, particularly when sketching and dimensioning.

In the short answer section of the paper the following general approaches were followed in allocating marks.

- To gain marks, responses needed to be consistent with the level of knowledge expected of a trainee in the engineering industry at a Certificate II standard.
- If a response did not address the subject of a question it was not given any marks.

Students are advised that they are more likely to be awarded marks for short, concise answers appropriate to the question, rather than a ‘range’ of responses.

SPECIFIC INFORMATION

Section A – VBN 771 Apply electrotechnology principles in an engineering environment

The table below indicates the percentage of students who chose each option. The correct answer is indicated by shading.

Question	% A	% B	% C	% D	Comments
1	1	5	91	3	
2	56	24	9	12	
3	8	81	6	6	
4	49	9	38	4	
5	3	1	8	88	
6	21	52	11	16	
7	63	8	18	12	
8	4	53	4	38	Students who chose option B ‘heating element in an electric jug’ may have related ‘thermo’ with heat. A thermocouple converts heat to electrical (correct answer), whereas a heating element converts electrical to heat.
9	39	41	14	6	If measuring resistance, the power supply must be turned off otherwise the fuse will blow or the multimeter will be damaged. Students who did not answer this question correctly may need more practical work in using multimeters.
10	36	16	34	14	
11	3	16	79	3	
12	14	77	5	4	
13	6	7	78	9	
14	15	3	10	72	
15	7	6	72	15	

The multiple-choice section of the exam was answered well by most students, showing that they had a reasonable grasp of the topic.

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Section B – VBN 773 Produce engineering sketches and drawings

Question 1a-d.

Marks	0	1	2	3	4	Average
%	3	13	28	34	23	2.6

Most students did well in reading and interpreting a drawing.

1a.

Round or circular

1b.

20 mm

If students added the tolerance it was also accepted, but not necessary.

1c.

10 mm

1d.

± 0.25 (140.25 – 139.75 was also accepted)

Question 1e-f.

Marks	0	1	2	3	Average
%	32	11	29	28	1.6

1e.

Maximum 28.12/minimum 27.88

1f.

Chamfer

Question 2

Marks	0	1	2	3	4	Average
%	12	24	29	24	10	2

Marks were allocated for:

- the correct outline in the third angle projection
- the hidden detail was correctly shown
- the centre lines were shown and properly drawn.

Many students failed to gain full marks on this question because they failed to draw according to the drawing conventions.

Question 3

Marks	0	1	2	3	Average
%	20	41	29	10	1.3

Marks were allocated for:

- the correct dimensioning of diameters
- dimensioning of lengths from datum
- correct drawing convention (placement of dimensions, arrow heads, etc.).

Again many students failed to gain full marks because the drawing did not have the correct dimensions.

Question 4

Marks	0	1	Average
%	77	23	0.3

Flat surface (square was also accepted)



Section C – VBN 776 Using basic engineering concepts to plan the manufacture of engineering components

Question 1a–d.

Marks	0	1	2	3	4	5	6	7	Average
%	2	1	5	10	17	27	27	11	4.9

1a.

Material Type	MS or Mild Steel
Material Dimensions	Ø10 x 22

1b.

Three jaw chuck. Collet was also accepted.

1c.

Any of the following responses (or similar) were accepted:

- saves time when doing the job
- the job can be done efficiently
- so you can make sure tools and materials are available in advance
- the progress of work can be monitored to meet delivery.

1d.

Task	Tools required
Turn the diameters and make thread	turning tool and die
Measure diameters and lengths	micrometer and vernier caliper (just vernier caliper was also accepted). Rule for measuring lengths was not accepted.

Question 2a–b.

Marks	0	1	2	Average
%	9	44	47	1.4

2a.

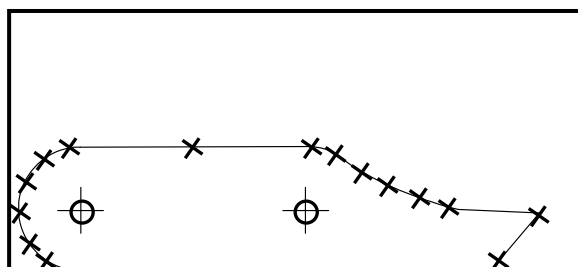
Datums

2b.

So the marked lines can be easily seen

Question 2ci–ii.

Marks	0	1	2	3	Average
%	7	68	7	17	1.4



This question on witness marking was answered poorly by many students.

Question 2d.

Marks	0	1	2	Average
%	8	2	90	1.8

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Sequence	Operation
1	mark out
2	drill holes
3	tap M6 thread
4	hacksaw
5	file shape

Question 3

Marks	0	1	Average
%	24	76	0.8

Flat blade screwdriver and spanners

Section D – VBN 777 Handle engineering materials in a safe and proper manner

The questions in this section were answered quite well by most students, demonstrating a good understanding of safety requirements in a workplace.

Question 1

Marks	0	1	2	Average
%	11	31	59	1.5

To ensure the area is safe for yourself and others before you start work
OR

To find any safety problems in a work area before work commences

Question 2

Marks	0	1	Average
%	12	88	0.9

B – False

Question 3

Marks	0	1	Average
%	53	47	0.5

Safe working load

Question 4

Marks	0	1	Average
%	27	73	0.8

Material Safety Data Sheet (MSDS was also accepted)

Question 5

Marks	0	1	Average
%	2	98	1

A – True

Question 6a–c.

Marks	0	1	2	3	Average
%	5	15	40	40	2.2

6a.

A

6b.

F

6c.

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C

Question 7

Marks	0	1	Average
%	26	74	0.8

E

Question 8

Marks	0	1	2	Average
%	5	42	53	1.5

Any two of:

- load falling onto people or machinery
- load hitting the plant or machinery
- load being dislodged if the crane stops quickly.

Question 9

Marks	0	1	2	Average
%	1	8	91	1.9

1. Safety shoes/boots
2. Overalls (or protective clothing)

Question 10

Marks	0	1	Average
%	9	91	0.9

Any one of:

- cuts to hands/fingers
- plate falling on feet
- back injury if lifted incorrectly.

Section E – VBN 778 Produce basic engineering components using fabrication and machining techniques

Question 1ai–iii.

Marks	0	1	2	3	Average
%	8	19	13	60	2.3

1ai.

D

1aii.

E

1aiii.

B

Question 1b–c.

Marks	0	1	2	Average
%	24	34	42	1.2

1b.

Centre drill

1c.

To make sure the drill is located in the correct position or to stop the drill from wandering out of position.

1d.

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Marks	0	1	2	Average
%	44	37	19	0.8

800 RPM (approximately)

A common mistake in this question was selecting 'free cutting mild steel' instead of simply 'mild steel'. In these cases, one out of the two marks was still awarded.

1e-f.

Marks	0	1	2	Average
%	20	36	45	1.3

1e.

8.5mm

1f.

10°

1g-i.

Marks	0	1	2	3	4	5	Average
%	5	19	18	20	23	15	2.8

1g.

Set up using centre in tailstock – adjust the height of the tool until it is visually aligned with the tailstock centre point
OR

Set up using a rule between the parting off tool and work – adjust the height of the tool until the rule is vertical

For two marks, answers needed to be descriptive (that is, not simply responses such as 'use tailstock').

1h.

A

1i.

- accuracy – features will run true to each other
- saves time – more efficient to avoid multiple set-ups

Question 2a.

Marks	0	1	Average
%	23	77	0.8

Ø 18 bar

2b-e.

Marks	0	1	2	3	4	5	Average
%	16	16	15	24	20	10	2.5

2b.

Dead centre and live centre

2c.

D

2d.

Right hand roughing tool. Right hand turning tool was also accepted.

2e.

A

Question 2f-g.

Marks	0	1	2	3	4	Average
%	7	15	24	45	10	2.4

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2fi.
16.16

2fii.
Fourth division to left of zero mark

One mark was given if the eighth division was marked.

2g.
It is used for grip.

Question 3a.

Marks	0	1	Average
%	50	50	0.5

Holding round material for marking out or machining

Question 3b–d.

Marks	0	1	2	3	Average
%	22	41	23	15	1.3

3b.
Arrow pointing to fixed jaw

3c.
Parallel strips

Block of wood was not accepted.

3d.
End Mill. Slot drill was also accepted.

Question 3e–h.

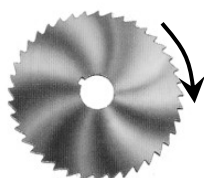
Marks	0	1	2	3	4	5	6	7	Average
%	4	1	3	13	14	26	19	19	4.8

3e.
760 RPM

One mark was given if working out was not shown.

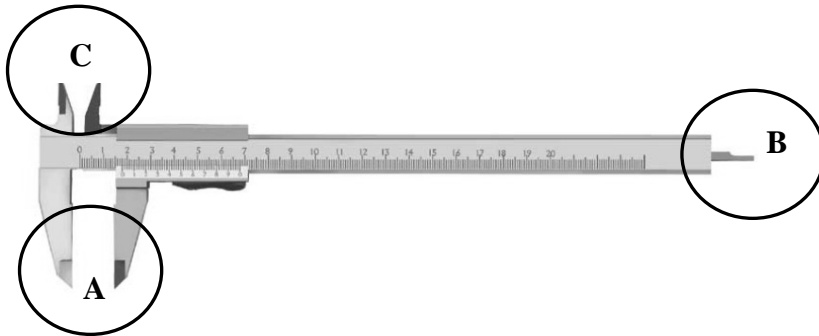
3f.
Try square (or engineers square or square)

3g.





3h.



Question 3i–k.

Marks	0	1	2	3	4	5	Average
%	3	7	15	25	32	18	3.3

3i.

Any three appropriate tools, typically:

- try square
- scriber
- vernier height gauge
- rule
- dividers (compass was not accepted)
- angle plate.

3j.

B

3k.

To break the chip or so the tap will not break