



HIGHER SCHOOL CERTIFICATE EXAMINATION

1998

INDUSTRY STUDIES

2 UNIT

METAL AND ENGINEERING STRAND PRACTICAL EXAMINATION

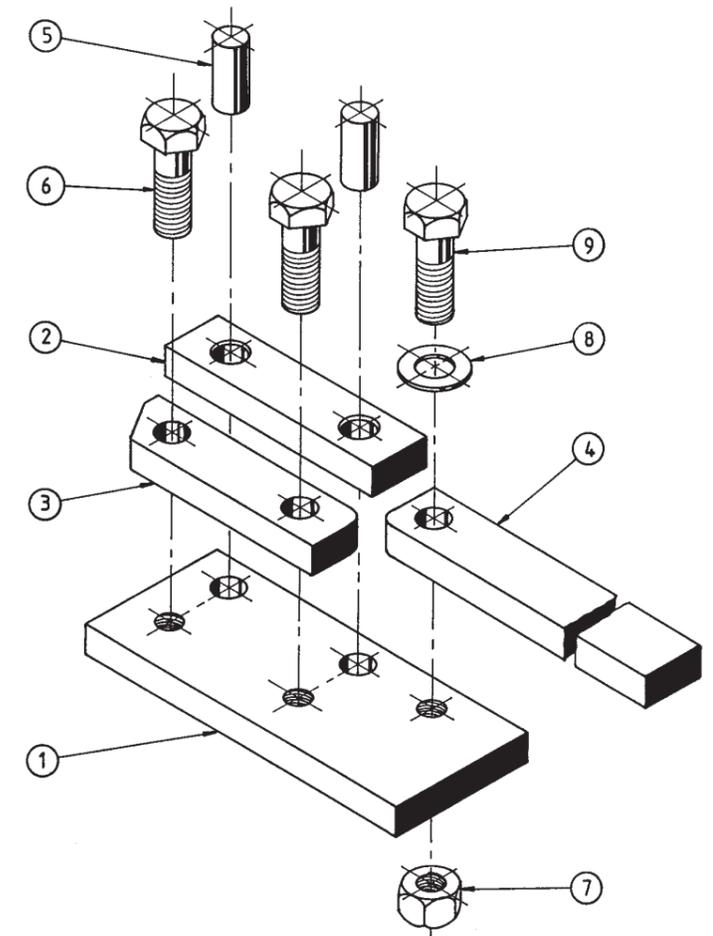
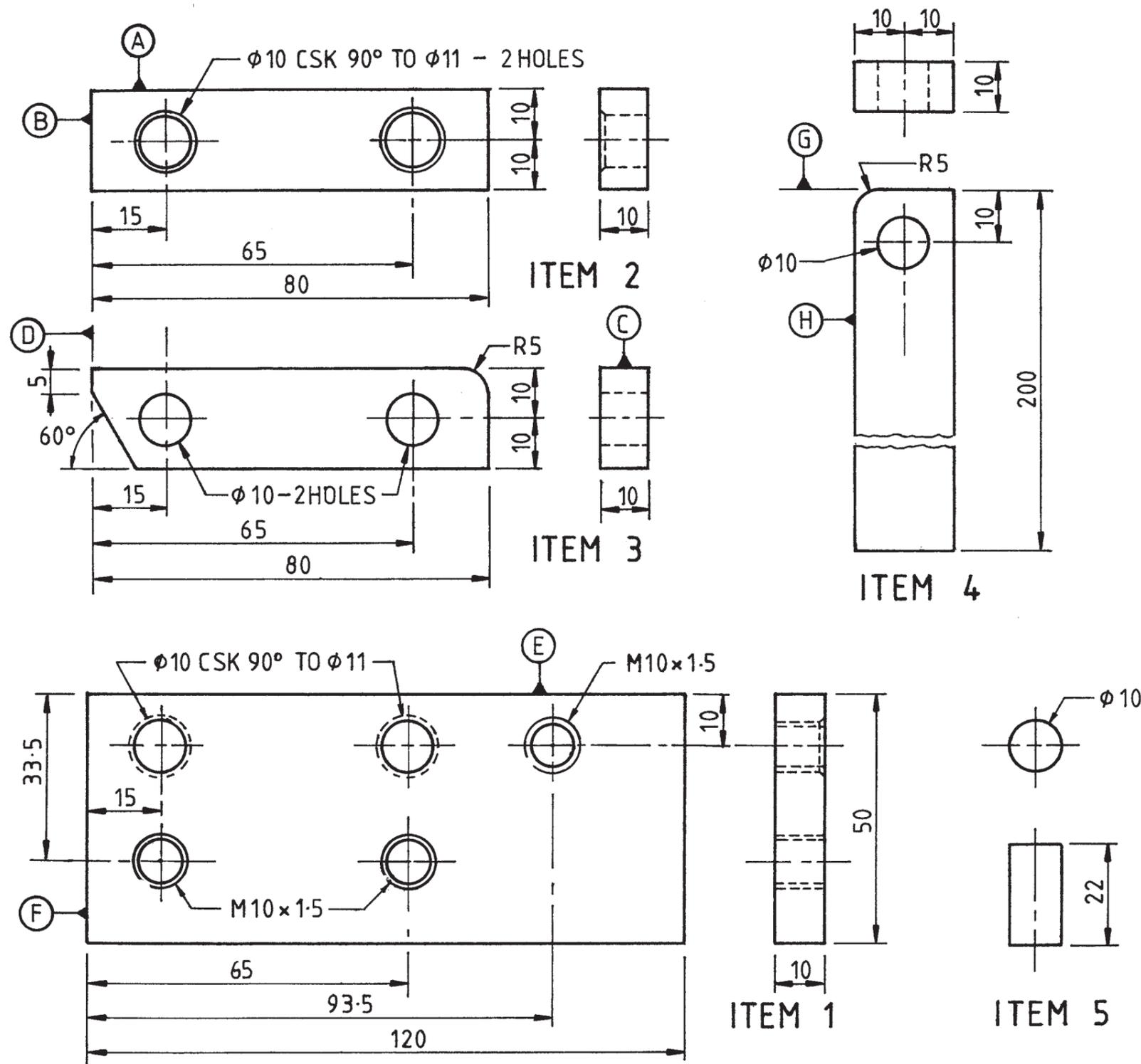
(50 Marks)

Time allowed—Two hours

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DIRECTIONS TO CANDIDATES

- The product should be assembled prior to presentation for assessment.
- All items **MUST** be clearly labelled with your Student Number and be sealed and presented in a plastic A4 envelope.
- All materials and equipment will be provided before the commencement of the examination.
- Each candidate is to be provided with only one set of materials for the examination.



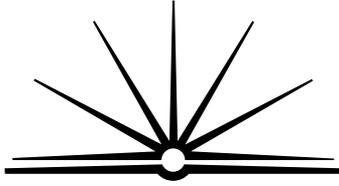
9	M10 × 1.5 hex. head bolt × 30 long	Stock	1
8	Ø10 flat washer	Stock	1
7	M10 × 1.5 hex. nut	Stock	1
6	M10 × 1.5 hex. head bolt × 30 long	Stock	2
5	Rivet	BMS	2
4	Handle	BMS	1
3	Movable jaw	BMS	1
2	Fixed jaw	BMS	1
1	Base	BMS	1
ITEM	DESCRIPTION	MAT'L	REQ'D

STRIP BENDER		
	REF.: NSW HSC 1998	
SCALE Full size	TOLERANCE Linear ±1 mm, angular ±0.5°	DRAWING NO. 1998-1

NOTES

- Items 6, 7, 8 and 9 will be provided to students as purchased items.
- Deburr all items prior to assembly.
- Rivets to be filed flush with the surfaces of Items 1 and 2.
- The strip bender to be assembled for presentation as per exploded view.
- Item 9 to be assembled finger tight, then Item 7 used to lock Item 9 in this position.
- Datum surfaces B, D, F and G to be filed flat and square.
- Student number must be attached to the assembled project.
- Items 6 and 9 to be left full length.

FOR CANDIDATE'S USE ONLY
JOB PLAN (no marks awarded)



B O A R D O F S T U D I E S
NEW SOUTH WALES

HIGHER SCHOOL CERTIFICATE EXAMINATION

1998

INDUSTRY STUDIES

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MATERIALS AND EQUIPMENT LIST

FOR THE

PRACTICAL EXAMINATION

**FOR THE INFORMATION OF TEACHERS,
COURSE DELIVERERS AND CANDIDATES**

MATERIALS

The following are the materials required for students presenting for the 1998 2 Unit Industry Studies Practical Examination in the Metal and Engineering strand.

- 20 × 10 flat bright mild steel × 170 long × 1 off
- 20 × 10 flat bright mild steel × 200 long × 1 off
- 50 × 10 flat bright mild steel × 120 long × 1 off
- Ø10 bright mild steel × 100 long × 1 off
- M10 × 1.5 hexagonal head bolt × 30 long × 3 off
- M10 × 1.5 hexagonal nut × 1 off
- Ø10 flat washer × 1 off

EQUIPMENT LIST

In cases where breakages occur—for example, if a tool breaks—candidates should be instructed to complete the task and be advised that no penalty will be incurred.

NOTES

(a) To safeguard the smooth running of this task, availability of multiples of the following equipment is recommended.

- | | |
|---------------------------------|--|
| • marking media | • Ø8.5 drill |
| • rule | • tapwrench to suit M10 taps |
| • ball peen hammer | • 5 mm radius gauge |
| • centre punch | • Ø3.5 drill |
| • files | • countersink to countersink Ø11 |
| • engineer's try square | • 'G' clamp |
| • combination set or protractor | • toolmaker parallel clamp |
| • hacksaw and blades | • hammering block/anvil |
| • cutting fluid | • open-end or ring spanners to suit M10 bolt and nut |
| • marking out tools | • drill vice |
| • M10 × 1.5 taps | |
| • Ø10 drill | |

This list of hand tools should be regarded as a minimum. Other hand tools may be used.

(b) The only power equipment that may be used for this task is:

- drill press
- hacksaw
- cut-off saw.

AVAILABILITY OF MATERIALS

Materials used in the Metal and Engineering Practical Examination are standard items and are available from metal suppliers.

The approximate prices are listed below.

Metals

<i>Description</i>	<i>Length available</i>	<i>Approximate cost/length</i>
20 × 10 flat bright mild steel	3.5 m	\$11.83
50 × 10 flat bright mild steel	3.5 m	\$27.72
Ø10 easy-cut bright mild steel	3.5 m	\$3.31

Others

<i>Description</i>	<i>Quantity supplied</i>	<i>Approximate cost</i>
M10 × 1.5 × 30 zinc-plated bolt	Each	\$0.12
Ø10 zinc-plated flat washer	Each	\$0.02

NOTE. Zinc-plated items are not essential for these TWO parts. Black mild steel items are also available and may be used.

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