OCR
RECOGNISING ACHIEVEMENT

Principal Learning

Engineering

OCR Level 3 Principal Learning in Engineering **H811**

Report on the Units

January 2010

H811/MS/R/10J

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This report on the Examination provides information on the performance of candidates which it is hoped will be useful to teachers in their preparation of candidates for future examinations. It is intended to be constructive and informative and to promote better understanding of the specification content, of the operation of the scheme of assessment and of the application of assessment criteria.

Reports should be read in conjunction with the published question papers and mark schemes for the Examination.

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REPORTS ON THE UNITS

Chief Examiner's Report

Introduction

This is the second year of assessment for the Principal Learning units within the Diploma in Engineering.

The opportunities for presenters to attend INSET, to use the excellent support materials provided and make their views known on the delivery and assessment of units has helped the development of many of the units within the scheme. All presenters are encouraged to attend one of a number of opportunities that are available for training.

There is evidence that some centres are becoming systematic in their approach to this diploma. With this systematic approach in mind centres should consider the learners' complete learning experience when designing learning programmes. This is particularly important in relation to learners studying part time alongside real work commitments where they may bring with them a wealth of experience that should be utilised to maximum effect by presenters.

H811 Advanced Unit F559 Instrumentation and control engineering

An externally marked unit

Section A - Learners attempted all nine questions.
Section B – Learners attempted four or more questions.

Centres are reminded to instruct learners to attempt four questions only in Section B

Individual questions:

Section A: Nine short answer questions

1 Full marks were not obtained because the responses needed more detail about the term Input. It would have been useful to mention that a basic system consists of three blocks – the first one being the Input.

2 A high proportion of learners did not get full marks because the block diagrams needed to be correctly annotated.

3 A mixed set of responses to this question. To access full marks learners should correctly list a range of Input devices.

4 A mixed set of responses to this question. To access full marks learners should correctly list a range of Output devices.

5 Full marks for this question were not obtained because the responses needed more detail about the term 'operational amplifier controller'. Learners needed to mention that the controller is a signal processing element.

6 A mixed set of responses to this question. Marks were awarded across the full range for this question. It was expected that a response explaining the difference between analogue and digital instruments would have been well known.

7 A number of learners missed the opportunity to gain full marks because they did not fully explain how to use a computer package to test digital circuits. However a few learners did recognise that simulation was involved in this procedure.

8 A mixed set of responses to this question. To access full marks learners should have named two devices that measure fluid flow in a control system.

9 A mixed set of responses to this question. To access full marks learners should have completed the table correctly for all four situations.

Section B: The learners had a choice of answering four questions from eight.

1 Insufficient data available for comment.

2 **(a)** The majority of learners stated correctly two practical applications of an LDR in a control circuit.

(b) The function of an LDR was not well understood.

(c) The use of an LDR in control applications was not well understood. The block diagram and circuit diagram presented by the learners did not gain many, if any, marks.

3 **(a)** Generally well answered by learners.

(b) Generally well answered by most learners.

(c) The correct formula for overall gain when 'negative feedback' is applied was not well known. In general, learners could not transpose stated formulae correctly and numerical values were often calculated incorrectly.

4 Insufficient data available for comment.

5 **(a)** A minority of learners correctly named two applications for a control system.

(b) Partially correct answers were given by all learners.

(c) A poorly answered question. Higher marks would have resulted from responses covering a wider range of topics other than just the filtering system.

6 **(a)** A poorly answered question. Learners did not correctly name two types of display.

(b) A poorly answered question. Learners did not explain, with two examples, the advantages of a seven-segment display.

(c) A poorly answered question. Learners did not fully describe the principle of operation of a seven- segment display.

7 **(a)** A poorly answered question. Learners did not correctly state two practical applications that use a pneumatic cylinder as a linear actuator.

(b) A poorly answered question. Learners did not correctly calculate the cross-sectional area of the cylinder. The unit of pressure was not well known.

(c) A poorly answered question. Learners could not describe how a push-button operated 3-port valve was used to control a single acting cylinder.

8 **(a)** Most learners stated correctly two practical applications for a monitored control system.

(b) A reasonable attempt was made to explain why it is often necessary to monitor a control system.

(c) Higher marks could have been obtained by giving an accurate and detailed description of a monitoring control system.

Grade Thresholds

OCR Level 3 Principal Learning in Engineering H811
January 2010 Examination Series

Unit Threshold Marks

Unit		Maximum Mark	A*	A	B	C	D	E	U
F559	Raw	60	48	42	36	30	24	18	0
	Points	14	12	10	8	6	4	2	0

No threshold data available for F563 January 2010

Specification Aggregation Results

No learners aggregated this series. Aggregation is not available for this specification until June 2010.

For additional guidance on the points awarding system, please refer to the Admin Guide for Diplomas at:
http://www.ocr.org.uk/download/admin/ocr_32911_admin_guide_diplomas.pdf

Statistics are correct at the time of publication.

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