Use of Optical Mark Scanners

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MCQ Exam - paper or computer based?

CBT – computer based testing

  multiple local centres

  appropriate security checks needed

  marking is done by software program

  more expensive to run

  reduced travel costs for candidates

  may only be appropriate for larger exams

  ISB in UK&I moving to this format

MCQ Exam - steps

Venue(s)

 single or multiple venues possible

 hotel, university, hospital etc.

Single easier to administer

Multiple easier for candidates

EBOPRAS MCQ Examination
held twice a year in Brussels

MCQ Exam - steps

Venue(s)

Invigilators

      may be specialist or lay

      specialist may be helpful in translingual exam to explain words

MCQ Exam - steps

Venue(s)

Invigilators

Marking

    By hand – tedious, error-prone

    By scanner

        fast

        accurate

        analysis reports available

        start-up costs (marksheets, decode software)

Exam Answer sheet

European Board of Plastic, Reconstructive & Aesthetic Surgery

Answer Sheet

Candidate Number

MARKING INSTRUCTIONS

This document is designed to be machine readable.
Select the one most appropriate answer.
- Mark like this
- Please use the pencil provided
- Please do NOT tick, cross or circle
- If you make a mistake use the eraser
- Do NOT crease or fold this sheet

Name

Date

1 [A] [B] [C] [D] [E]   26 [A] [B] [C] [D] [E]   51 [A] [B] [C] [D] [E]   76 [A] [B] [C] [D] [E]
2 [A] [B] [C] [D] [E]   27 [A] [B] [C] [D] [E]   52 [A] [B] [C] [D] [E]   77 [A] [B] [C] [D] [E]
3 [A] [B] [C] [D] [E]   28 [A] [B] [C] [D] [E]   53 [A] [B] [C] [D] [E]   78 [A] [B] [C] [D] [E]
4 [A] [B] [C] [D] [E]   29 [A] [B] [C] [D] [E]   54 [A] [B] [C] [D] [E]   79 [A] [B] [C] [D] [E]
5 [A] [B] [C] [D] [E]   30 [A] [B] [C] [D] [E]   55 [A] [B] [C] [D] [E]   80 [A] [B] [C] [D] [E]

6 [A] [B] [C] [D] [E]   31 [A] [B] [C] [D] [E]   56 [A] [B] [C] [D] [E]   81 [A] [B] [C] [D] [E]
7 [A] [B] [C] [D] [E]   32 [A] [B] [C] [D] [E]   57 [A] [B] [C] [D] [E]   82 [A] [B] [C] [D] [E]
8 [A] [B] [C] [D] [E]   33 [A] [B] [C] [D] [E]   58 [A] [B] [C] [D] [E]   83 [A] [B] [C] [D] [E]

Automated sheet feed scanner

New Scanner

6kg weight

Reads pencil or ink

Automatic sheet feed

Better discrimination of erased marks

Carry case for air transportation

PC connection only – not Mac

Speedwell Multiquest

File Edit Search Data Print Options Window Help

New Open Close Capture Print Scores Resps Delete Exit Help

Correct Answers

Exam Name   EBOPRAS MCQ 21 - 2009

Quantity of Responses   100   **Number of First Question**   1

○ Single Correct Answer

○ TFD style Questions   Variable ☐

Scores   ☐ Var

Correct   1.00   Void   0.00

Scanning

	Accepted	Rejected
Sheets Scanned	3	0

Sheet Accepted

Waiting

Insert a sheet in the scanner.

[Done]

Question	A	B			
1	1.00	0.00			
2	0.00	0.00			
3	0.00	0.00			
4	0.00	1.00			
5	0.00	0.00	0.00	1.00	0.00
6	0.00	0.00	0.00	0.00	1.00
7	0.00	1.00	0.00	0.00	0.00

[Capture] [Import]   ✔ OK   ✗ Cancel   ? Help

temp

MCQ Exam - steps

Venue(s)

Invigilators

Marking

Validation

     Uses analysis report as basis

     Statistical & Clinical aspects to the performance of questions.

     This cannot be done by lay people

European Board of Plastic Surgery
Speedwell Multiquest Report
File: EBOPRAS 2009

Item Analysis Report (Response Order)
EBOPRAS MCQ 21 - 2009

MCQ analysis

**Exam statistics: Mean: 69.3 (72.2%)   St. Dev.: 9.19 (9.57%)   Candidates: 97   KR20: 0.818**

Question 46

		Thirds	Right	Wrong	R-W	Void
Mean Score:	0.928	% All	92.8	7.2	85.6	0.0
33% Item Discrimination:	0.087	Upper	96.9	3.1	93.8	0.0
Point Biserial:	0.131	Lower	88.1	11.9	76.3	0.0
Correct Answer:	D	Facility	92.8			
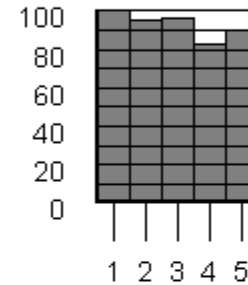
% Answer Frequency						
Multi	Blank	A	B	C	D	E
0.0	0.0	4.1	1.0	2.1	92.8	0.0

Question 47

		Thirds	Right	Wrong	R-W	Void
Mean Score:	0.608	% All	60.8	39.2	21.6	0.0
33% Item Discrimination:	0.400	Upper	81.3	18.8	62.5	0.0
Point Biserial:	0.390	Lower	41.3	58.7	-17.5	0.0
Correct Answer:	E	Facility	60.8			
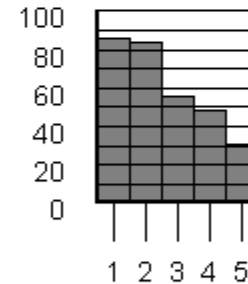
% Answer Frequency						
Multi	Blank	A	B	C	D	E
0.0	0.0	29.9	0.0	5.2	4.1	60.8

Question 48

		Thirds	Right	Wrong	R-W	Void
Mean Score:	0.330	% All	33.0	67.0	-34.0	0.0
33% Item Discrimination:	0.538	Upper	65.6	34.4	31.3	0.0
Point Biserial:	0.413	Lower	11.9	88.1	-76.3	0.0
Correct Answer:	B	Facility	33.0			
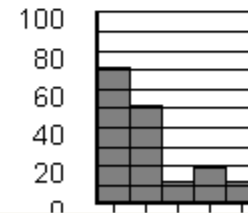
% Answer Frequency						

MCQ Exam - steps

Venue(s)

Invigilators

Marking

Validation

Passmark setting

For a competence exam, the modified Angoff procedure is the best method. This requires the examiners to be specialists. This can be done in advance of examination.

Basing mark purely on statistics
(eg mean – 1SD, or X% fail) not appropriate

MCQ Exam - steps

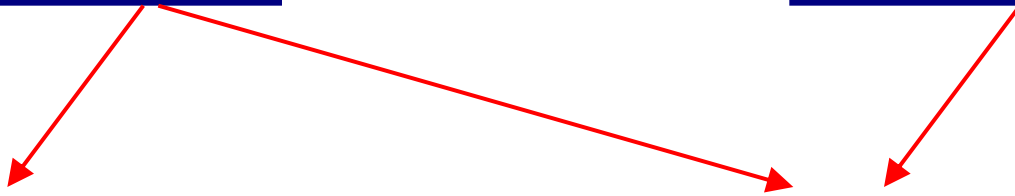Venue(s)

Invigilators

Marking

Validation

Passmark setting

Results can be issued

On-site scanning

Cost to purchase - £5000

OR

Rental £ 250/exam

onsite attendance £ 700/day

plus travel etc.

(Prices exclude VAT)

Scanning & processing bureau service

Cost to purchase -   nil

Scanning   £ 500/day
Analysis services   £ 500/day

(Prices exclude VAT)

nk you for your attention