

---

UNIVERSITI SAINS MALAYSIA

Second Semester Examination  
Academic Session 2007/2008

April 2008

**PGT 202E - BASIC EDUCATIONAL MEASUREMENT AND  
EVALUATION**  
*[ASAS PENGUKURAN DAN PENILAIAN PENDIDIKAN]*

Duration : 3 hours  
*[Masa : 3 jam]*

---

Please ensure that this examination paper consists of **NINE** pages of printed material before you begin the examination.

*[Sila pastikan bahawa kertas peperiksaan ini mengandungi **SEMBILAN** muka surat yang bercetak sebelum anda memulakan peperiksaan ini].*

**INSTRUCTION:**

Answer **ALL** questions in this paper.

Students are allowed to answer all questions in English **OR** Bahasa Malaysia.

**ARAHAN :**

Jawab **SEMUA** soalan di dalam kertas peperiksaan ini.

Pelajar dibenarkan menjawab semua soalan dalam Bahasa Inggeris **ATAU** Bahasa Malaysia.

Answer **ALL** Questions

1. Differentiate and give examples for each of the following:
  - (a) Norm reference test and criterion reference test
  - (b) Summative assessment and formative assessment
  - (c) Analytic scoring and holistic scoring
  - (d) Constructed-response tests and selected-response tests

(25 marks)

2. Table 1 shows item analysis for 20 objective (MCQ) test items taken by 25 students. Determine the value of :

- (a) KR 21
- (b) KR 20

You **MUST** show your work for every step.

(20 marks)

- (c) What do you understand of KR-20 value obtained in terms of the objective test administered? (not more than 40 words)

(5 marks)

Table 1: Item Analysis

Student	Items																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1
3	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1
4	1	0	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1
5	0	0	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1
6	0	0	0	1	1	1	1	1	0	0	1	0	1	1	0	1	0	0	1	1
7	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1
8	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	0	1
9	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	0	0	1	1
10	0	0	1	1	1	1	0	0	0	0	1	0	1	1	1	1	0	1	1	1
11	0	0	1	1	1	1	0	1	0	1	1	1	1	1	1	1	0	1	1	1
12	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1
13	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
14	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
15	1	1	1	0	0	1	1	1	0	1	0	1	1	1	1	1	1	1	1	1
16	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
17	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
18	1	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	1	1	1	1
19	1	0	0	1	1	1	1	1	0	0	1	1	0	1	1	0	0	1	1	1
20	1	0	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1
21	1	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1
22	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	0	0	1
23	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
24	1	1	1	0	0	1	1	1	0	1	0	1	1	1	1	1	1	1	1	1
25	1	0	0	1	1	1	1	1	0	0	0	0	1	1	1	1	1	1	1	1

Legend: 1 = correct; 0 = wrong

Table 2: Item Analysis

Items Students	1	2	3	4	5	6	7	8	9	10
Upper Group										
Ahmad	0	1	1	1	1	1	1	1	1	1
Lee	1	0	1	1	1	1	0	1	1	1
Rani	1	1	1	1	1	0	0	1	1	1
Ramesh	0	1	0	1	1	1	1	1	1	1
Zul	1	1	1	1	1	1	1	1	1	1
Lina	1	0	0	1	1	1	1	1	1	1
Lower Group										
Ting	1	1	1	1	0	0	0	0	1	1
Ritha	1	1	0	0	0	0	0	1	1	1
Helmi	1	1	1	1	1	0	0	0	1	1
Sufian	0	1	1	1	1	0	1	0	0	1
Aini	1	1	1	1	1	0	0	0	1	0
John	1	1	0	0	1	1	0	1	1	1

3. (a) Table 2 shows item analysis for 10-item Multiple Choice Question (MCQ) test taken by 12 students.

- i) Determine the discrimination index and difficulty level for each item.
- ii) Based on the discrimination index and difficulty level, which items should be:
  - a. maintained
  - b. improved and tried again
  - c. rejected or revised

(17 marks)

(b) Discuss the weaknesses of item based on:

- i) wrongly given answer (miskeying)
- ii) guessing
- iii) ambiguity
- iv) the effectiveness of the distracters

(8 marks)

...5/-

**TERJEMAHAN**

Jawab **SEMUA** Soalan

1. Bezakan dan berikan contoh-contoh untuk setiap yang berikut:

- (a) Ujian rujukan norma dan ujian rujukan kriteria
- (b) Penilaian sumatif dan penilaian formatif
- (c) Pemarkahan analitik dan pemarkahan holistik
- (d) Ujian pembinaan respons dan ujian pemilihan respons

(25 markah)

2. Jadual 1 menunjukkan analisis item bagi 20 item ujian objektif (MCQ) yang diambil oleh 25 orang pelajar. Tentukan nilai:

- (a) KR 21
- (b) KR 20

Anda **MESTI** tunjukkan langkah pengiraan.

(20 markah)

- (c) Apakah yang anda faham tentang nilai KR-20 yang diperolehi dalam konteks ujian objektif yang ditakbirkan? (tidak lebih daripada 40 patah perkataan).

(5 markah)

Jadual 1: Analisis Item

Pelajar	Item																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1
3	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1
4	1	0	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1
5	0	0	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1
6	0	0	0	1	1	1	1	1	0	0	1	0	1	1	0	1	0	0	1	1
7	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1
8	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	0	1
9	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	0	0	1	1
10	0	0	1	1	1	1	0	0	0	0	1	0	1	1	1	1	0	1	1	1
11	0	0	1	1	1	1	0	1	0	1	1	1	1	1	1	1	0	1	1	1
12	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1
13	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
14	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
15	1	1	1	0	0	1	1	1	0	1	0	1	1	1	1	1	1	1	1	1
16	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
17	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
18	1	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	1	1	1	1
19	1	0	0	1	1	1	1	1	0	0	1	1	0	1	1	0	0	1	1	1
20	1	0	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1
21	1	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1
22	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	0	0	1
23	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
24	1	1	1	0	0	1	1	1	0	1	0	1	1	1	1	1	1	1	1	1
25	1	0	0	1	1	1	1	1	0	0	0	0	1	1	1	1	1	1	1	1

Petunjuk: 1 = jawapan betul; 0 = jawapan salah

Jadual 2: Analisis Item

Item \ Pelajar	1	2	3	4	5	6	7	8	9	10
Kumpulan Atas										
Ahmad	0	1	1	1	1	1	1	1	1	1
Lee	1	0	1	1	1	1	0	1	1	1
Rani	1	1	1	1	1	0	0	1	1	1
Ramesh	0	1	0	1	1	1	1	1	1	1
Zul	1	1	1	1	1	1	1	1	1	1
Lina	1	0	0	1	1	1	1	1	1	1
Kumpulan Bawah										
Ting	1	1	1	1	0	0	0	0	1	1
Ritha	1	1	0	0	0	0	0	1	1	1
Helmi	1	1	1	1	1	0	0	0	1	1
Sufian	0	1	1	1	1	0	1	0	0	1
Aini	1	1	1	1	1	0	0	0	1	0
John	1	1	0	0	1	1	0	1	1	1

3. (a) Jadual 2 menunjukkan analisis item bagi 10 item ujian pelbagai pilihan yang diambil oleh 12 orang pelajar.

- i) Tentukan indeks diskriminasi dan paras kesukaran bagi setiap item.
- ii) Berdasarkan indeks diskriminasi dan paras kesukaran, nyatakan item-item yang boleh:
  - a. dikekalkan
  - b. dibetulkan kesilapan dan cuba sekali lagi
  - c. ditolak atau ditulis semula

(17 markah)

(b) Bincangkan kelemahan-kelemahan item berdasarkan:

- i) kesalahan memberi jawapan
- ii) tekaan
- iii) kekaburan
- iv) keberkesanan pengganggu

(8 markah)

...9/-

4. (a) Menurut Airasian (1991, ms. 244) anda dikehendaki memberi definisi bagi setiap ciri aktiviti yang terlibat dalam penilaian berasaskan perlakuan (*performance-based assessment*). Jelaskan dengan lebih lanjut langkah-langkah yang diambil untuk menentukan ciri-ciri yang dipilih.

(10 markah)

- (b) Berdasarkan penilaian anda, jelaskan tujuan penilaian berasaskan perlakuan dalam konteks sekolah.

(15 markah)