



# Pembinaan Item Berkualiti

LIM BP



## Objektif :

- **Berkongsi** pengetahuan dan latihan tentang **teknik dan kemahiran** dalam menghasilkan **item berkualiti** bersama *pensyarah*.



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## Content

1. Analisis-Analisis Item PA
2. Pembinaan Item Q
  - Format
  - Taburan Aras Kognitif
  - Konteks, Kata tugas, Masa

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### Rujukan Utama :

Garis Panduan Pengurusan Bank Item & Peraturan  
Permarkahan Politeknik

### LAMPIRAN E : KRITERIA PENGGUBAL DAN PANEL PENILAI

1.0 Kriteria penggubal dan pemilihan panel penilai adalah seperti berikut:

#### Penggubal :

- Telah mengajar kursus berkenaan sekurang-kurangnya **1 semester**.\*
- Telah menjadi pemeriksa skrip jawapan peperiksaan akhir sekurang-kurangnya sekali.

\* **Pensyarah kursus** disarankan WAJIB mengikuti :

- Kursus Pembinaan Item Berkualiti atau yang setara dengannya dalam tempoh **tahun pertama** perkhidmatan bagi **pensyarah baharu**
- Kursus Pembinaan Item Berkualiti atau yang setara dengannya sekurang-kurangnya **3 tahun sekali dalam gred semasa**.



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# 1. Pengurusan Item PA di Poli

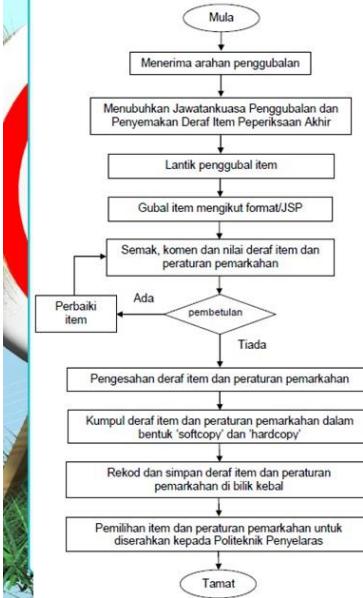


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LAMPIRAN B : CARTA ALIR PROSES PENGGUBALAN DAN PENYEMAKAN DRAFT ITEM DAN PERATURAN PEMARKAHAN PEPERIKSAAN AKHIR DI PERINGKAT POLITEKNIK



Tindakan:

Politeknik  
Jawatankuasa Penggubalan dan Penyemakan Draft Item dan Peraturan Peremarkahan Peperiksaan Akhir Politeknik

Pengarah Politeknik  
Pensyarah Kursus

PANEL SEMAKAN DRAFT ITEM  
- Ketua Program / Pensyarah Kanan / Pensyarah Utama / Ketua Kursus Bahasa Inggeris

Ketua Jabatan / Ketua Program

Pegawai Peperiksaan

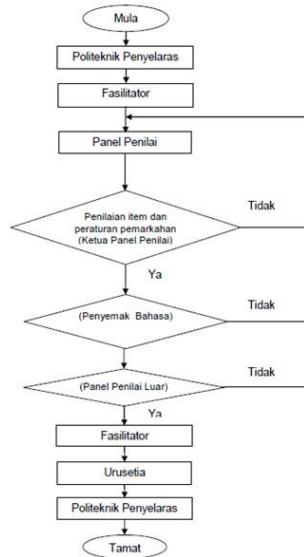
BPN / Jawatankuasa Penilaian dan Pemurnian Item dan Peraturan Peremarkahan Peperiksaan Akhir / Pegawai Peperiksaan

Garis Panduan  
Pengurusan Bank Item  
& Peraturan  
Peremarkahan  
Politeknik



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LAMPIRAN C : CARTA ALIR JAWATANKUASA PENILAIAN DAN PEMURNIAN ITEM DAN PERATURAN PEMARKAHAN PEPERIKSAAN AKHIR



Garis Panduan  
Pengurusan Bank Item  
& Peraturan  
Peremarkahan  
Politeknik



GARIS PANDUAN PENGURUSAN BANK ITEM DAN PERATURAN PEMARKAHAN POLITEKNIK  
KEMENTERIAN PENDIDIKAN MALAYSIA

Gubal 5 Set,  
Pilih 2 Set.



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SULIT

**POLITEKNIK**  
MALAYSIA

BAHAGIAN PEPERIKSAAN DAN PENILAIAN  
JABATAN PENDIDIKAN POLITEKNIK  
KEMENTERIAN PENDIDIKAN TINGGI

JABATAN TEKNOLOGI MAKLUMAT & KOMUNIKASI

PEPERIKSAAN AKHIR  
SESI JUN 2017

DFC2073 : PROGRAMMING FUNDAMENTALS

TARIKH : 31 OKTOBER 2017  
MASA : 8.30 PAGI - 10.30 PAGI (2 JAM)

Kertas ini mengandungi DUA PULUH LIMA (25) halaman ber-

Bahagian A: Objektif (30 soalan)  
Bahagian B: Struktur (2 soalan)

Dokumen sokongan yang disertakan : Tiada

**ARAHAN:**  
Bahagian ini mengandungi DUA (2) soalan berstruktur. Jawab SEMUA soalan.

**QUESTION 1** (27 M) C1 10 C2 10 C3 7

**SOALAN 1**

(a) List THREE (3) types of error in C++ programming.  
Senarakkan TIGA (3) jenis kesalahan di dalam aturcara C++ [3 marks]

(b) Explain debugging process in a program.  
Terangkan proses debugging dalam program [2 marks]

(c) List TWO (2) types of operator used in C++ programming.  
Senarakkan DUA (2) jenis operator yang digunakan dalam pengaturcaraan C++. [2 marks]

CLO1 C1  
CLO2 C2  
CLO3 C3  
CLO4 C4

**JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIJAWAB!**  
(CLO yang tertera hanya sebagai rujukan) C1

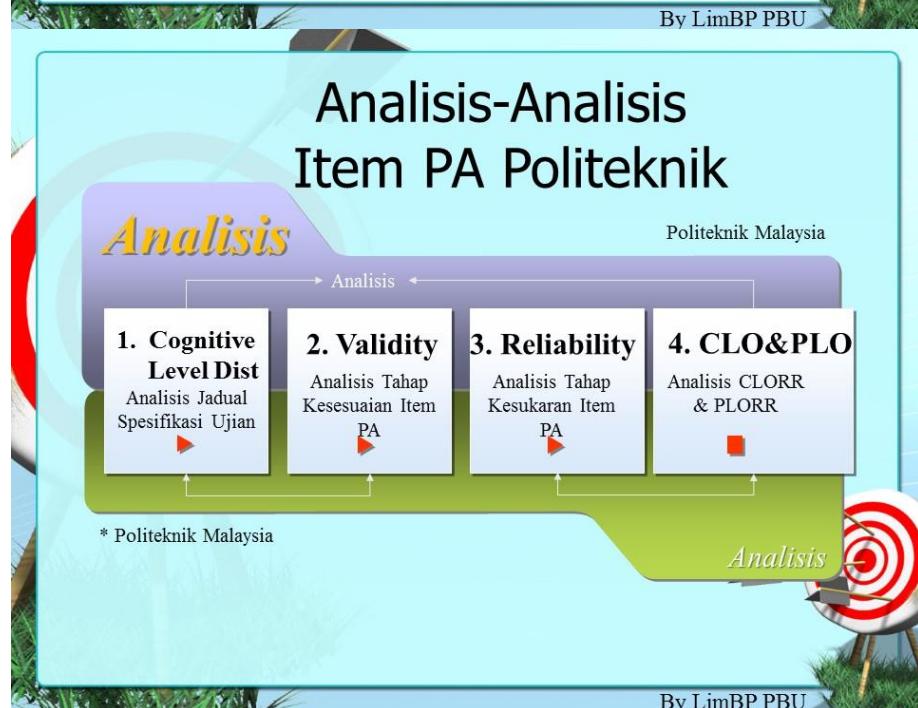
SULIT

The END ??

SECTION B: 55 MARKS  
BAHAGIAN B: 55 MARKAH

INSTRUCTION:  
This section consists of TWO (2) structured questions. Answer ALL questions.

arahansoalan.com



**Analisis 1 : Analisis Jadual Spesifikasi Ujian**

Menentukan taburan aras kognitif kertas soalan peperiksaan akhir sesuatu kursus.

**LANGKAH 2** Tentukan kata kerja dalam item tersebut.

1.  
a) Strategic Management is all about gaining and maintaining a sustainable competitive advantage. List down 5 (FIVE) types of competitive advantages. (5 marks)

**LANGKAH 4** Rekod aras kognitif soalan ke dalam Jadual Spesifikasi Ujian, JSU (Template UiTM).

TEMPLATE FOR COGNITIVE LEVEL DETERMINATION

NO	ITEM/SOALAN	C1	MARK	TOPIC	Q TYPE	Duration	C2	MARK	TOPIC	Q TYPE	Duration	C3	MARK	TOPIC	Q TYPE	Duration	C4	MARK	TOPIC	Q TYPE	Duration
1	Q1(a)	1	5	topic 1	Essay	6 min						1	10	topic 2	Essay	12 min					
2	Q1(b)											1	10	topic 2	Essay	12 min					
3	Q1(c)											1	10	topic 2	Essay	12 min					
4																					
5																					
6																					
7																					

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**Analisis 1 : Analisis Jadual Spesifikasi Ujian (JSU)**

Daripada analisis JSU, akan memperolehi

- Ringkasan taburan aras kognitif soalan
- Ringkasan kognitif item berdasarkan pembahagian markah
- Kognitif paling dominan perlu mencatatkan peratusan diantara 50% hingga 60%.

Summary C1 C2 C3 C4 C5 C6

Percentage 0.10 0.25 0.60 0.05 0 0

Percentage of Marks 0.10 0.25 0.60 0.05 0 0

(contoh ringkasan taburan yang diperolehi)

60% - Kognitif paling dominan dalam set soalan ini

PERCENTAGE : PERCENTAGE TO TOTAL NUMBER OF ITEM

PERCENTAGE OF MARKS : PERCENTAGE OF MARKS ASSOC TO THE LEVEL COMPARED TO TOTAL MARKS (100)

Summary C1 C2 C3 C4

Percentage 0.10 0.25 0.60 0.05

Percentage of Marks 0.10 0.25 0.60 0.05

Nota: Dapat dari jadual di atas menunjukkan bahawa set soalan ini dominan kepada aras kognitif C3.

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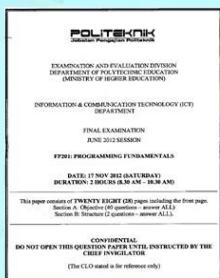
## Analisis 1: Analisis Jadual Spesifikasi Ujian (JSU)

### RUMUSAN

Hasil daripada dapatan analisis ini menunjukkan **taburan aras kognitif** bagi setiap kertas peperiksaan akhir politeknik.

Sekiranya taburan ini **tidak memenuhi kehendak FEIST**, maka set soalan tersebut **perlu dimurnikan**.

Taburan aras kognitif ini dapat menunjukkan kesesuaian item yang digunakan dalam Peperiksaan Akhir selaras dengan **kehendak kurikulum (CLO)**.



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## Analisis 2: Analisis Tahap kesesuaian Item PA (Validity Test)

Analisis tahap kesesuaian item peperiksaan akhir politeknik dilakukan oleh **panel-penilai luar** dari **Institusi Pengajian Tinggi, Industri dan Badan-badan Profesional** yang dilantik berdasarkan bidang kepakaran adalah bertujuan untuk memastikan kesahan kandungan sesuatu set item memenuhi kehendak kurikulum sesuatu kursus.

### 1.0 PENDAHULUAN

Politeknik Sultan Idris Shah (PSIS) merupakan politeknik penyelaras dan pengajar bagi Bengkel Penilaian dan Pemuraman Item Peperiksaan Akhir Politeknik bagi program Diploma Teknologi Maklumat (Rangkaian), Diploma Teknologi Maklumat (Pengaturcaraan) dan Diploma Pengurusan Logistik dan Rangkaian Bekalan. Untuk memastikan jaminan kualiti item peperiksaan politeknik, panel penilai luar (IPT/industri/badan profesional) telah dilantik bagi menyemak, menilai dan mengesahkan set soalan peperiksaan dan peraturan pemarkahan setiap kursus bagi program berkenaan. Dapat ini seterusnya dapat dijadikan rujukan kepada penggalan untuk melaksanakan proses penambahan semasa membangunkan soalan peperiksaan pada sesi berikutnya.

### 3.0 SENARAI PANEL PENILAI LUAR (IPT/INDUSTRI/BADAN PROFESIONAL)

Bil.	Nama Panel Penilai	Bidang Kepakaran	IPT/Industri/Badan Profesional
1.	P.M Dr.Ahmad Zamzuri Bin Mohamad Ali	Diploma Teknologi Maklumat (Pengaturcaraan) (DIP)	UPSI
2.	Dr. Amir Raan Bin Abd Rahman	Diploma Teknologi Maklumat (Rangkaian) (DNS)	UPM
3.	Kamal Hamoni Bin Kamal Ariff	Diploma Pengurusan Logistik dan Rangkaian Bekalan (DLS)	Tenergy Quest Sdn Bhd (TQS)



LAPORAN DAN ANALISIS PANEL PENILAI LUAR  
TERHADAP ITEM PEPERIKSAAN AKHIR POLITEKNIK  
KPT SESI DIS 2015  
TAHAP 2, 5 KOD BAHRU (LISA) DAN TAHAP 5, 6 KOD LAMA

BAHAGIAN PEPERIKSAAN DAN PENILAIAN  
JABATAN PENDIDIKAN POLITEKNIK

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## 2. Analisis Tahap kesesuaian Item PA (Validity Test)

### Item Yang Dinilai oleh Panel Luar :

1. Format item bentuk objektif, subjektif & esei adalah bersesuan.
2. Kata tugas item bersifat jelas.
3. Konteks item bersifat jelas.
4. Keseimbangan item meliputi **LOT & HOT**
5. **Aras Kesukaran**
6. Masa menjawab.
7. Item menepati **keperluan pengajaran**.
8. Relevant dgn **keperluan semasa**.

5.1.1 Diploma Teknologi Maklumat (Pengaturcaraan)  
Jadual 2: Skor Min/Tahap Kesesuaian Item Peperiksaan Akhir Politeknik  
Program Diploma Teknologi Maklumat (Pengaturcaraan)

Bil.	KURSUS*	Item Tahap Kesesuaian	
		Min	Max
1.	FP201 Programming Principles	5	3.80
2.	FP205 Computer Essentials	5	3.60
		4.00	4.20
		3.00	4.20
		3.00	4.20
		4.00	4.40
		4.00	4.60
		4.00	4.40
		3.00	4.00
		3.56	4.13
		Min Keseluruhan	

Jadual 2: Skor Min/Tahap Kesesuaian Item Peperiksaan Akhir Politeknik  
Program Diploma Teknologi Maklumat (Pengaturcaraan)

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## Analisis 3 : Analisis Tahap Kesukaran Item PA ; (Reliability/Difficulty Test)

Analisis tahap kesesuaian item ialah satu proses menganalisis secara statistik **tindakbalas calon** terhadap setiap item dalam sesuatu ujian untuk membuat pertimbangan mengenai **kualiti dan keberkesanan item-item** tersebut.

Objektif analisis item penilaian adalah untuk:

- 3.1 Mengenalpasti **kebolehpercayaan item** (*item reliability*)
- 3.2 Mengenalpasti **aras kesukaran item** (*level of difficulty*)
- 3.3 Menghasilkan Laporan Analisis Item Penilaian
- 3.4 Menentukan item yang akan dimasukkan ke dalam **Bank Soalan**.



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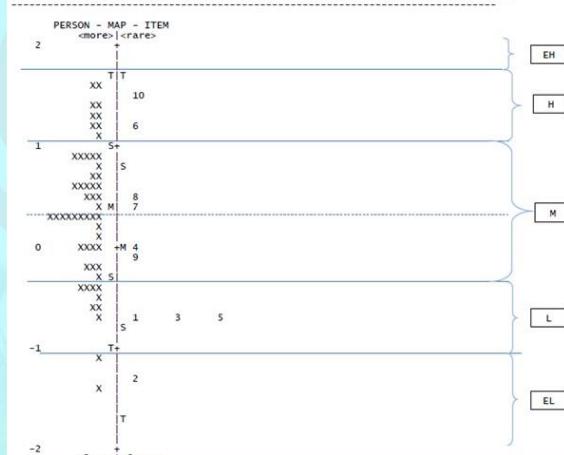
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### 3. Analisis Tahap Kesukaran Item PA

Analisis item yang digunakan adalah berdasarkan **Model Rasch**.

#### Person Distribution Map :

TABLE 12.2 WINSTEP CC205\_JBHN A\_UN2013.xlsx ZOU906WS.TXT Dec 5 16:04 2013  
INPUT: 55 PERSON 10 ITEM MEASURED: 55 PERSON 10 ITEM 49 CATS WINSTEPS 3.69.1.11



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### 3. Analisis Tahap Kesukaran Item PA

Analisis item yang digunakan adalah berdasarkan **Model Rasch**.

#### Item Measurement :

CC205 CONTROL FILE (SHORT QUESTION).txt												
13-786WS - Notepad												
File Edit Format View Help												
TABLE 13.1 WINSTEP CC205_JBHN A_UN2013.xls ZOU906WS.TXT Jan 16 11:26 2014												
INPUT: 55 PERSON 10 ITEM MEASURED: 55 PERSON 10 ITEM 49 CATS WINSTEPS 3.69.1.11												
PERSON: REAL SEP.: 1.64 REL.: .73 ... ITEM: REAL SEP.: 5.40 REL.: .97												
ITEM STATISTICS: MEASURE ORDER												
ENTRY NUMBER	TOTAL SCORE	COUNT	MEASURE	S.E.	INFIT	OUTFIT	PT-MEASURE	EXACT MATCH	ITEM G	ITEM	OBSE	EXP%
10	33	55	1.49	.17	1.26	1.2	1.45	1.4	0	28	.44	50.9
6	41	55	1.18	.13	.93	-.2	.88	-.2	0	50	.50	41.8
8	96	55	.53	.12	.23	-.1	.75	-.1	0	71	.21	52.9
7	108	55	.39	.10	.83	-.9	.76	-.8	0	72	.66	34.5
4	133	55	-.01	.12	1.27	1.5	.28	1.5	0	29.1	.33	33.1
9	151	55	-.15	.12	1.03	-.1	1.18	1.7	0	59	.62	32.7
5	187	55	-.67	.13	.90	-.3	.47	-.3	0	60	.56	65.5
1	163	55	-.73	.17	.97	-.1	.98	-.1	0	49	.48	41.8
3	185	55	-.73	.14	.88	-.4	1.13	.4	0	57	.55	63.6
2	206	55	-.26	.22	1.25	-.7	.70	-.3	0	42	.39	62.1
MEAN	130.2	55.0	-.00	.14	1.01	-.6	.96	.1	0	47.1	.48	51.1
S.D.	57.1	0	-.84	.03	-.17	.8	.29	.9	0	17.6	.16	16.6

1. Reliability 0.8 to 1.0
2. Infit Mean Square 0.7 to 1.3
3. Point Measure Correlation 0.4 to 0.8

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### 3. Analisis Tahap Kesukaran Item PA

Jadual Keputusan Analisis Item PA

JADUAL KEPUTUSAN ANALISIS ITEM PENILAIAN

Bil	Kod Kursus	Kursus	Kebolehpercayaan Item			Peratus Aras Kesukaran Item (%)								
			Objektif	Soalan pendek	Esei	EL	Bil Item	%						
1	DCC1023	CIVIL ENG MATERIALS	-	0.81		1	16.67	0	0	5	83.33	0	0	0
						0.46	0	0	1	9.09	8	72.73	2	18.18
2	DCC2063	MECHANICS OF CIVIL ENGINEERING STRUCTURES	-	0.99	0	0	1	16.67	4	66.67	1	16.67	0	0
						0.84	0	0	1	9.1	8	72.7	2	18.2
3	DCC2073	CONTRACT AND ESTIMATING	-	0.96		1	25	0	0	3	75	0	0	0
						0.92	2	25	0	0	6	75	0	0

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### 3. Analisis Tahap Kesukaran Item PA

Borang Maklum Balas KETIDAKAKURAN (B1C/BPN)

B1C/BPN

BORANG MAKLUM BALAS KETIDAKAKURAN

(Dir dan Jabatan Akademik Politeknik Penyelara)

PROGRAM				
POLITEKNIK				
BIL PERKARA	KOD KURSUSS	KOD POLITEKNIK PENGGUBAL	NOMBOR ITEM	CATATAN / TINDAKAN POLITEKNIK PENYELARA
1				
2				
3				
4				
5				
6				
7				
8				
Lain-lain (dinyatakan)				

KOD PERKARA:

(P1) Item digubal tidak mengikut FEIST  
(P1t) Tidak mengikut domain taksonomi  
(P1c) Tidak mengikut CLO  
(P1m) Tidak mengikut agihan markah

(P2) Peraturan pemarkahan tidak menjawab soalan

(P3) Item sama berulang

(P4) Set sama berulang

(P5) Tidak digubal dalam dwi-bahasa

(P6) Tidak mengikut format penulisan

(P7) Rajah/ jadual tidak jelas

(P8) Lain-lain (dinyatakan)

Disediakan oleh: \_\_\_\_\_

Disahkan oleh: \_\_\_\_\_

Ketua Jabatan/ Ketua Program/ Penyara Kursus \_\_\_\_\_ Timbalan Pengaruh Akademik Politeknik \_\_\_\_\_

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#### Ketidakakuruan :

- P1) Item digubal tidak mengikut FEIST
  - (P1t) Tidak mengikut domain taksonomi
  - (P1c) Tidak mengikut CLO
  - (P1m) Tidak mengikut agihan markah
- P2) Peraturan pemarkahan tidak menjawab soalan
- P3) Item sama berulang
- P4) Set sama berulang
- P5) Tidak digubal dalam dwi-bahasa
- P6) Tidak mengikut format penulisan
- P7) Rajah/ jadual tidak jelas
- P8) Lain-lain (dinyatakan)

#### **4. Analisis CLO, CORR, PLO, PLORR**

Pengukuran dan analisis hasil pembelajaran merupakan **keperluan MQA dalam MQF(COPPA: Bidang Area 3 – Penilaian Pelajar dan Bidang Area 7 – Pemantauan dan Semakan Program)**

Analisis CLO

- Hasil pembelajaran kursus (*Course Learning Outcome*, CLO) bagi setiap kursus perlu **sejajar** dengan *PLO*.
  - Pencapaian hasil pembelajaran kursus dianalisis melalui sistem ke dalam bentuk laporan yang dikenali sebagai ***Course Outcome Review Report (CORR)***.
  - Laporan disediakan di akhir setiap sesi pembelajaran kursus.
  - Pencapaian hasil pembelajaran kursus yang dicapai dan cadangan penambahanbaikan (**CQI**) perlu diisi oleh setiap pensyarah dan penyelaras kursus



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#### 4. Analisis CLO, CORR,PLO, PLORR

## Laporan Analisis CORR

PROGRAMME CLASS SESSION		DEP - DIPLOMA KEJURUTERAAN ELEKTRONIK (KOMUNIKASI)									
		DEP6B DISEMBER 2013									
2. PROGRAMME LEARNING OUTCOME											
CODE	COURSE	PLO1 KNOWLEDGE	PLO2 TECHNICAL SKILLS	PLO3 PROFESSIONALISM & ETHICS	PLO4 SOCIAL SKILLS	PLO5 COMMUNICATION SKILLS	PLO6 CRITICAL THINKING	PLO7 LIFE LONG LEARNING	PLO8 ENTREPRENEURIAL SKILLS	PLO9 LEADERSHIP SKILLS	PLO11 ---
EP601	WIRELESS COMMUNICATION	49	81	58	88	88	88	88	88	88	88
EP602	MICROWAVE DEVICES	62	76	74	88	88	88	88	88	88	88
EP604	TELECOMMUNICATION SYSTEM	75	0	88	0	88	88	88	88	88	88
ET404	ELECTRICAL TECHNOLOGY	0	0	88	88	88	88	88	88	88	0
ET405	WIRING DISTRIBUTION	0	0	88	88	88	88	88	88	88	88
ET406	ELECTRICAL CIRCUITS	70	79	88	88	88	88	88	88	88	88
PE201	ENTREPRENEURSHIP	72	77	88	88	88	88	57	88	88	88
<b>AVERAGE ATTAINMENT (%)</b>		<b>63</b>	<b>72</b>	<b>72</b>	<b>75</b>	<b>56</b>	<b>86</b>	<b>57</b>	<b>71</b>	<b>80</b>	—



7. PREPARED BY / DISEDIAKAN OLEH

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#### 4. Analisis CLO, CORR,PLO, PLORR

Analisis PLO

- Analisis pencapaian *PLO* bergantung kepada indeks prestasi utama (**Key Performance Indicators, KPI**) yang telah ditetapkan dalam program yang direkabentuk.
  - Lazimnya pencapaian *PLO* terhadap graduan bagi sesuatu program dinilai atau **diukur sebaik sahaja pelajar bergraduat**.
  - Pencapaian hasil pembelajaran program dianalisis melalui sistem ke dalam bentuk laporan yang dikenali sebagai **Programme Learning Outcome Review Report (PLORR)**.



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#### 4. Analisis CLO, CORR,PLO, PLORR

Analisis ***Programme Learning Outcome Review Report (PLORR)***.

ACHEVEMENT/PENCAPAIAN	COMMENT/CADANGAN
<p>1. Pencapaian PLO bagi Kursus CA201  <math>(PLO1=55\%, PLO2=45\% \text{ dan } PLO3=42\%)</math>,  <math>CA203 (PLO1=48\%)</math> dan <math>CA204</math>  <math>(PLO1=47\% \text{ dan } PLO2=47\%)</math>. Lebih rendah berbanding dengan kursus-kursus yang lain.</p>	<p>1. CADANGAN: Pensyarah yang akan mengajar kursus (CA201, CA203 dan CA204) pada semester berikutnya perlu memberikan perhatian kepada pencapaian PLO bagi kursus tersebut.</p>
<p>2. Pencapaian PLO "Group Attainment" bagi PLO3 adalah rendah dari PLO yang lain  <math>(PLO3 = 59\%)</math></p> 	<p>2. CADANGAN: Pensyarah yang akan mengajar Kursus (CA201) yang memangkang matkul ini untuk persipaihan PLO3, pada semester berikutnya perlu memberikan perhatian kepada PLO tersebut.</p>  



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#### **4. Analisis CLO, CORR,PLO, PLORR**

Mesyuarat Jawatankuasa Akademik Politeknik dilaksana bagi membincangkan pencapaian hasil pembelajaran program Jabatan dan cadangan penambahbaikan yang perlu terhadap program tersebut.

Hasil dapatan analisis *CORR* dan *PLORR* dibentangkan oleh Ketua Program ke peringkat **mesyuarat TPA** atau Ketua Jabatan pada peringkat **Jabatan Pengurusan Politeknik**.

LAPORAN PENCAPAIAN HASIL PEMBELAJARAN PROGRAM JABATAN											
<b>POLITEKNIK</b> <b>JURUTERA</b> <b>SEJARAH</b> <b>DISEJAKUAN 2019</b>											
<b>KOD PROGRAM</b>	<b>NAMA PROGRAM</b>	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10
		<b>DIPLOMA KELEBURUTRAN AWAM</b>									
<b>DIA</b>	PENCAPAIAN										
	CADANGAN										
<b>ECD PROGRAM</b>	<b>NAMA PROGRAM</b>	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10
		<b>DIPLOMA SENIBINA</b>									
<b>DSB</b>	PERCAPAIAN										
	CADANGAN										
<b>DISEJAKUKAN OLEH:</b>											
<b>DISEJAKUKAN OLEH:</b>											
<b>(NAMA KETUA PROGRAM)</b>											
<b>(NAMA KETUA JABATAN)</b>											



## **Summary :**

## **1. Analisis-Analisis Item PA**

- i) Analisis JSU
  - ii) Analisis Kesesuaian Item (Validity Test)
  - iii) Analisis Tahap Kesukaran (Reliability/DL Test)
  - iv) Analisis CLO, CORR, PLO, PLORR



## **2. Pembinaan Item Berkualiti**

### i) Format

- ii) Taburan Aras Kognitif
  - iii) Tahap Kesukaran
  - iv) Kata Tugas
  - v) Masa Jawab
  - vi) Contoh



By JimBP PBU

Analisis 2 : Analisis Tahap kesesuaian Item PA (Validity Test)

#### **Item Yang Dinilai oleh Panel Luar :**

1. **Format** item bentuk objektif, subjektif & esei adalah bersesuian.
  2. **Kata tugas** item bersifat jelas.
  3. **Konteks** item bersifat jelas.
  4. **Keseimbangan** item meliputi **LOT & HOT**
  5. **Aras Kesukaran**
  6. **Masa** menjawab.
  7. Item menepati **keperluan pengajian**.
  8. Relevant dgn **keperluan semasa**

			Bil	Kursus*
1.	FP101 Programming Principles Computer Essentials	5 5 5 5 5		<p>Bilangan Sampel (N)</p> <p>Format item bentuk objektif, subjektif dan esei adalah bersesuaian</p> <p>Kata tugas item bersifat jelas</p> <p>Konteks item bersifat jelas</p> <p>Keseimbangan item meliputi <i>Low Order Thinking</i> dan <i>High Order Thinking</i></p> <p>Aras kesukanan item adalah bersesuaian</p> <p>Pembagian markah adalah bersesuaian</p> <p>Masa menjawab adalah mencukupi</p> <p>Item menejati keperluan pengajian</p> <p>Item adalah relevan dengan keperluan semasa/IPT</p>
2.				4.15

**Jadual 2: Skor Min Tahap Kesesuaian Item Peperiksaan Akhir Politeknik Program Diploma Teknologi Maklumat (Pengaturcaraan)**



By JimBP PBU

## 2.1 Format Item PA 2019

### PANDUAN PENYEDIAAN DAN PENULISAN KERTAS SOALAN PEPERIKSAAN AKHIR POLITEKNIK MALAYSIA

1. Pensyarah kursus yang dilantik bertanggungjawab menyediakan set item yang lengkap seperti yang diarahkan.
2. Bahasa penulisan adalah dalam dwibahasa. Item hendaklah digubal dalam Bahasa Inggeris dan diikuti terjemahannya dalam Bahasa Malaysia (*Italic*).
3. Pensyarah bertanggungjawab untuk memastikan kerahsiaan dan keselamatan item dijaga sepenuhnya sepanjang proses penyediaan dokumen tersebut.
4. Setiap item perlu dinyatakan *CLO* dan Aras Kognitif.
5. Formasi formula diselaraskan – maksimum 2 mukasurat. Penyediaan Formula Selaras adalah tanggungjawab politeknik penyelaras namun pengubalan item digalakkkan memberi cadangan formula yang ingin digunakan dan sebarang pindaan adalah melalui politeknik penyelaras.
6. Tajuk bagi setiap jadual adalah berada di bahagian atas jadual, manakala tajuk bagi rajah dan lain-lain berada di bahagian bawah.
7. Sekiranya item merupakan soalan dengan penyelesaian terbuka (*open ended solution*) pengubalan harus memberi panduan menjawab bagi item tersebut.
8. Pernyataan “SOALAN TAMAT” perlu dinyatakan selepas soalan terakhir.
9. Format muka depan peperiksaan akhir versi deraf adalah seperti Lampiran I.
10. Semua item ditulis menggunakan format seperti ketetapan berikut (rujuk bersama Lampiran II):



By LimBP PBU

## 2.1 Format Item PA 2019

### a) Format Muka Depan

SULIT	SULIT
BAHAGIAN PEPERIKSAAN DAN PENILAIAN JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI KEMENTERIAN PENDIDIKAN MALAYSIA	BAHAGIAN PEPERIKSAAN DAN PENILAIAN JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI KEMENTERIAN PENDIDIKAN MALAYSIA
JABATAN KEJURUTERAAN MEKANIKAL	JABATAN KEJURUTERAAN MEKANIKAL
PEPERIKSAAN AKHIR SESI JUN 2018	PEPERIKSAAN AKHIR SESI JUN 2018
DET2013: ELECTRICAL CIRCUITS	DJJS123: PNEUMATIC AND HYDRAULICS
TARIKH : 02 JULAI 2018 MASA : 8.30 AM – 10.30 AM (2 JAM)	TARIKH : 02 JULAI 2018 MASA : 8.30 AM – 10.30 AM (2 JAM)
Kertas ini mengandungi SEPULUH (10) halaman bercetak. Bahagian A: Objektif (20 soalan) Bahagian B: Struktur (10 soalan) Bahagian C: Esei (3 soalan) Dokumen sokongan yang disertakan: Kertas Graf, Formula dsb / Tiada	Kertas ini mengandungi SEPULUH (10) halaman bercetak. Struktur (4 soalan) Dokumen sokongan yang disertakan: Kertas Graf, Formula dsb / Tiada
JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIARAHKAN (CLO yang tertera hanya sebagai rujukan)	JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIARAHKAN (CLO yang tertera hanya sebagai rujukan)
SULIT	SULIT

By LimBP PBU

## 2.1 Format Item PA 2019

### b. Format Penulisan Kertas Soalan PA

#### FORMAT PENULISAN KERTAS SOALAN PEPERIKSAAN AKHIR POLITEKNIK MALAYSIA

→ **JENIS FONT** : TIMES NEW ROMAN (Bahasa Inggeris)  
TIMES NEW ROMAN ITALIC (Bahasa Malaysia)

→ **SAIZ FONT** : 12

**JARAK BARIS : 1.5 (UNTUK SOALAN SUBJEKTIF)**

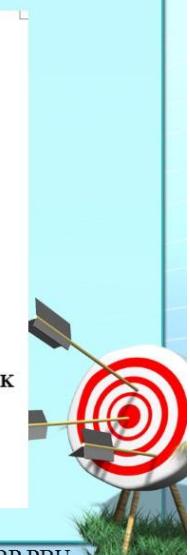
**JARAK BARIS : 1.0 (UNTUK SOALAN OBJEKTIF)**

**MARGIN** : Top = 1.0”, Bottom = 1.0”  
Left = 1.5”, Right = 1.0”

**TAB** : 0.5”

**HEADER** : SULIT dan KOD & NAMA KURSUS / NAMA POLITEKNIK  
. PENGGUBAL (SAIZ FONT : 10)

**FOOTER** : SULIT dan mukasurat (SAIZ FONT : 10)



By LimBP PBU

## 2.1 Format Item PA 2019

### c. Format Penulisan Kertas Soalan PA

#### Best Pratice : Softcopy & EDIT !

SULIT	SECTION A : 20 MARKS BAHAGIAN A : 20 MARKAH	DET2012: ELECTRICAL CIRCUITS KOD & NAMA KURSUS
1.5” 3.81cm	1.0” 2.54cm	1.0” 2.54cm
INSTRUCTION: This section consists of TWENTY (20) objective questions. Mark your answers in the OMR form provided.		
ARAHAN: Bahagian ini mengandungi DUA PULUH (20) soalan objektif. Tandakan jawapan anda di dalam borang OMR yang disediakan.		
CLO1 C3		
1. Refer to the series circuit in Figure A1, find the bandwidth if the resonant frequency (f <sub>r</sub> ) is 6kHz. Merujuk kepada litar sesiri dalam Rajah A1, dapatkan lebar jalur jika frekuensi resonan (f <sub>r</sub> ) adalah 6kHz.		

By LimBP PBU

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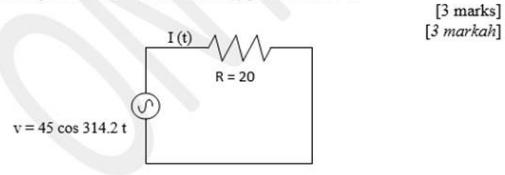
## 2.1 Format Item PA 2019 : 4 KESALAHAN UMUM

### a) Kaedah Label Diagram/ Table

CLO2  
C3 **QUESTION 2**  
Referring to Diagram B2, calculate the value of current  $I(t)$  at time  $t=0$ .

**SOALAN 2**

Merujuk kepada Rajah B2, kirakan nilai arus  $I(t)$  pada masa  $t=0$ .



[3 marks]  
[3 markah]

Diagram B2 / Rajah B2  
  
Kaedah melabel Jadual atau Rajah:

Diagram B2 / Rajah B2 ; bermaksud rajah yang digunakan untuk Bahagian B Soalan 2.

Table C5 / Jadual C5 ; bermaksud jadual yang digunakan untuk Bahagian C Soalan 5.

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## 2.1 Format Item PA 2019 : KESALAHAN UMUM

### b) Format Tak Seragam

CLO1  
C1 (a) Define the terms below:  
*Berikan definisi bagi istilah berikut:*

i. Base quantity

*Kuantiti asas*

[2 marks]

[2 markah]

ii. Derived quantity

*Kuantiti terbitan*

[2 marks]

[2 markah]

CLO3  
C3 (c) Convert the following units.  
*Tukarkan unit-unit yang berikut.*

i.  $100.5 \text{ mm}^3$  into  $\text{cm}^3$ .

*$100.5 \text{ mm}^3$  kepada  $\text{cm}^3$ .*

[3 marks]

[3 markah]

ii.  $20 \text{ m/s}^2$  into  $\text{km/h}^2$ .

*$20 \text{ m/s}^2$  kepada  $\text{km/h}^2$ .*

[3 marks]

[3 markah]

## 2.1 Format Item PA 2019 : KESALAHAN UMUM

### b) Format Tak Seragam

**DJJ3103 : STRENGTH OF MATERIALS**

CLO1  
C2 (b) A rod with a diameter of 30 mm is subjected to compressive force of 170 kN. This force causes a reduction of  $0.17 \times 10^{-3}$  m of the rod's length. The initial length of the rod is 250 mm. Determine the modulus of elasticity of this material.

*Satu rod herdiameter 30 mm dikenakan daya mampatan sebanyak 170 kN. Beban ini menyebabkan pengurangan panjang  $0.17 \times 10^{-3}$  m. Panjang asal rod adalah 250 mm. Tentukan modulus keanjalan bahan ini.*

[8 marks]

[8 markah]



By LimBP PBU

## 2.1 Format Item PA 2019 : KESALAHAN UMUM

### b) Format Tak Seragam

CLO1  
C1 (a) Define the terms below:  
*Berikan definisi bagi istilah berikut:*

i. Base quantity

*Kuantiti asas*

[2 marks]

[2 markah]

ii. Derived quantity

*Kuantiti terbitan*

[2 marks]

[2 markah]

CLO3  
C3 (c) Convert the following units.  
*Tukarkan unit-unit yang berikut.*

i.  $100.5 \text{ mm}^3$  into  $\text{cm}^3$ .

*$100.5 \text{ mm}^3$  kepada  $\text{cm}^3$ .*

[3 marks]

[3 markah]

ii.  $20 \text{ m/s}^2$  into  $\text{km/h}^2$ .

*$20 \text{ m/s}^2$  kepada  $\text{km/h}^2$ .*

[3 marks]

[3 markah]

By LimBP PBU

## 2.1 Format Item PA 2019 : KESALAHAN UMUM

### c) Translation



- |            |  |
|------------|--|
| CLO1<br>C1 | (a) List <b>FIVE (5)</b> types of assessment that can be made by the Inland Revenue Board (IRB) to the chargeable person.<br><br>[5 marks]   |
|            | (b) Mr Razlan first arrived in Malaysia on November 1, 2013. His pattern of stays in Malaysia from 2013 to 2017 were as follows:-<br><br>(a) <i>Senaraikan LIMA (5) jenis taksiran yang boleh dibuat oleh Lembaga Hasil Dalam Negeri (LHDN) kepada orang yang boleh dikenakan cukai.</i><br><br>[5 markah] |
|            | (b) <i>En Razlan pertama kali tiba di Malaysia pada 1 November 2013. Tempoh beliau berada di Malaysia dari tahun 2013 hingga 2017 adalah seperti berikut:-</i>   |

By LimBP PBU

## 2.1 Format Item PA 2019 : KESALAHAN UMUM

### c) Translation

- |    |            |  |
|----|------------|--|
| BI | CLO1<br>C1 | (a) List <b>FIVE (5)</b> types of assessment that can be made by the Inland Revenue Board (IRB) to the chargeable person.<br><br>[5 marks]   |
|    |            | (b) Mr Razlan first arrived in Malaysia on November 1, 2013. His pattern of stays in Malaysia from 2013 to 2017 were as follows:-<br><br>(a) <i>Senaraikan LIMA (5) jenis taksiran yang boleh dibuat oleh Lembaga Hasil Dalam Negeri (LHDN) kepada orang yang boleh dikenakan cukai.</i><br><br>[5 markah] |
| BM | CLO1<br>C1 | (b) <i>En Razlan pertama kali tiba di Malaysia pada 1 November 2013. Tempoh beliau berada di Malaysia dari tahun 2013 hingga 2017 adalah seperti berikut:-</i>   |

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## 2.1 Format Item PA 2019 : KESALAHAN UMUM

### c) Translation



- |            |   |
|------------|---|
| CLO2<br>C3 | (e) Write a C++ statement to define :<br><br>i. A variable "Umur" which has a initial value of 18.<br>ii. A variable "Nombor" which has a initial value of 3.98.<br>iii. A variable "Gred" which has a initial value as "A".<br><br>(e) <i>Tulis satu kenyataan C++ untuk mengisyiharkan:</i><br>i. <i>Satu pembolehubah "Umur" yang mempunyai nilai permulaan 18.</i><br>ii. <i>Satu pembolehubah "Nombor" yang mempunyai nilai permulaan 3.98.</i><br>iii. <i>Satu pembolehubah "Gred" yang mempunyai nilai permulaan "A".</i><br><br>[3 marks]<br>[3 markah] |
|------------|---|



By LimBP PBU

## 2.1 Format Item PA 2019 : KESALAHAN UMUM

### c) Translation



- |            |   |
|------------|---|
| CLO2<br>C3 | (e) Write a C++ statement to define :<br><br><i>Tulis satu kenyataan C++ untuk mengisyiharkan:</i><br><br>i. A variable "Umur" which has a initial value of 18.<br><i>Satu pembolehubah "Umur" yang mempunyai nilai permulaan 18</i><br><br>ii. A variable "Nombor" which has a initial value of 3.98.<br><i>Satu pembolehubah "Nombor" yang mempunyai nilai permulaan 3.98</i><br><br>iii. A variable "Gred" which has a initial value as "A".<br><i>Satu pembolehubah "Gred" yang mempunyai nilai permulaan "A".</i><br><br>[3 marks]<br>[3 markah] |
|------------|---|



By LimBP PBU

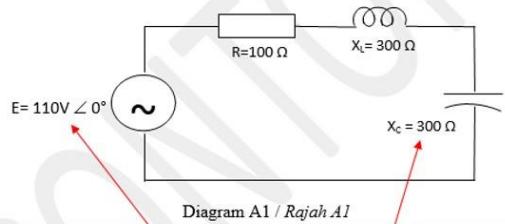
## 2.1 Format Item PA 2019 : KESALAHAN UMUM

### d) Translation OF Unit

CLO1  
C3

- Refer to the series circuit in Figure A1, find the bandwidth if the resonant frequency ( $f_r$ ) is 6kHz.

Merujuk kepada litar sesiri dalam Rajah A1, dapatkan lebar jalur jika frekuensi resonan ( $f_r$ ) adalah 6kHz.



- A. 1 KHz / 1KHz
- B. 2 KHz / 2KHz
- C. 4 KHz / 1KHz
- D. 9 KHz / 9KHz

By LimBP PBU

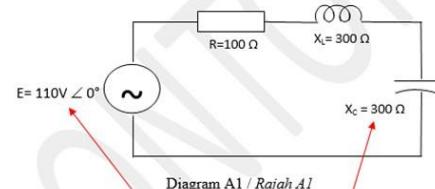
## 2.1 Format Item PA 2019 : KESALAHAN UMUM

### d) Translation OF Unit

CLO1  
C3

- Refer to the series circuit in Figure A1, find the bandwidth if the resonant frequency ( $f_r$ ) is 6kHz.

Merujuk kepada litar sesiri dalam Rajah A1, dapatkan lebar jalur jika frekuensi resonan ( $f_r$ ) adalah 6kHz.



- A. 1 kHz
- B. 2 kHz
- C. 4 kHz
- D. 9 kHz

Technical term, nombor dan unit, tidak perlu diterjemahkan ke Bahasa Malaysia.



By LimBP PBU

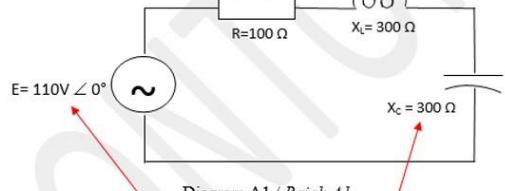
## 2.1 Format Item PA 2019 : KESALAHAN UMUM

### d) Translation OF Unit

CLO1  
C3

- Refer to the series circuit in Figure A1, find the bandwidth if the resonant frequency ( $f_r$ ) is 6kHz.

Merujuk kepada litar sesiri dalam Rajah A1, dapatkan lebar jalur jika frekuensi resonan ( $f_r$ ) adalah 6kHz.



- A. 1 KHz / 1KHz
- B. 2 KHz / 2KHz
- C. 4 KHz / 1KHz
- D. 9 KHz / 9KHz

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## 2. Pembinaan Item Berkualiti

- i) Format
- ii) Taburan Aras Kognitif
- iii) Tahap Kesukaran
- iv) Kata Tugas
- v) Masa Jawab
- vi) Contoh

By LimBP PBU

Analisis 2 : Tahap kesesuaian Item PA (Validity Test)

Bil.	KURSUS*	Item Tanah Keseuaian
1	FP101 Programming Principles	<p>Bilangan Sampel (N)</p> <p>Format item bentuk objektif, subjektif dan esei adalah bersesuaian</p> <p>Kata tugas item bersifat jelas</p>
2	FP005 Computer Essentials	<p>Konteks item bersifat jelas</p> <p>Keseimbangan item meliputi Low Order Thinking dan High Order Thinking</p> <p>Aras kesukaran item adalah bersesuaian</p>
3		<p>Pembahagian markah adalah bersesuaian</p>
4		<p>Masa menjawab adalah mencukupi</p>
5		<p>Item menepati keperluan pengajaran</p>
6		<p>Item adalah relevan dengan keperluan semasa/IPT</p>
<b>Min Keseluruhan</b>		

5.1.1 Diploma Teknologi Maklumat (Pengurusan)

**Item Yang Dinilai oleh Panel Luar :**

1. **Format** item bentuk objektif, subjektif & esei adalah bersesuaian.
2. **Kata tugas** item bersifat jelas.
3. **Konteks** item bersifat jelas.
4. **Keseimbangan item meliputi LOT & HOT**
5. **Aras Kesukaran**
6. Masa menjawab.
7. Item menepati **keperluan pengajian**.
8. Relevant dgn **keperluan semasa**.



By LimBP PE

## 2.2 Taburan Aras Kognitif

## **FEIST (Final Exam Item Specification Table)**



By LimBP PBU

## 2.2 Taburan Aras Kognitif

FEIST Format Lama :

PoliTeknik Penyelaras	PoliTeknik Kuala Terengganu	High	Verb: [C4-C6]**	THINKING, CALCULATING, etc	(complex)	
Jabatan Akademik	Jabatan Teknologi Maklumat					
Nama Program	Diploma in Information Technology					
Ketua Program	En Abdul Halim bin Ahmad					
Pensyarah Kurus	1. Napisah binti Harun					
Course: FP201 - PROGRAMMING FUNDAMENTALS						
Final Examination Format : Objective (40); Subjective (Structured) (2);						
Course Learning Outcome (CLO)						
Upon completion of this course students should be able to:-						
1. Apply program structure and debugging process in C++ programming language accordingly. (C3, P3)						
2. Design programs using appropriate control structures, arrays, structures, functions and pointers. (C5, P3)						
3. Solve problems using C++ programming language environment with proper coding style guidelines and take in the security issues into consideration. (P4, A3)						
CONTEXT	COURSE LEARNING OUTCOME			TAXONOMY DOMAIN	TYPE OF ITEM	
Topic	CLO1	CLO2	CLO3	Cognitive Level	Objective (40)	Subjective (Structured) (2)
					L M H	
Introduction to C++ Programming	✓			C1 - C3	3 2 1	
Basic C++ Program	✓			C1 - C3	5 3 2	Q1
Program Control	✓	✓	✓	C1 - C4	8 3 3 2	
Array and Structures	✓	✓	✓	C1 - C5	8 3 3 2	Q2
Function	✓	✓	✓	C1 - C5	8 5 1 2	
Pointer	✓	✓	✓	C1 - C4	5 3 1 1	**
Secure Programming in C++				C1 - C4	3 1 1 1	
TOTAL ITEM				40 20 12 8	2	



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## 2.2 Taburan Aras Kognitif

FEIST Format baru :

<b>EFFECTIVE DATE</b>		01/09/2018																															
<b>CODE &amp; COURSE TITLE</b>		OPF2013 PROGRAMMING FUNDAMENTALS																															
<b>FEEST PANEL</b>		NORZAHM CHE HASSAN																															
<b>DURATION (HOURS)</b>		2																															
<b>MCQ/SHORT ANSWER/ ESSAY STRUCTURED QUESTION</b>																																	
<b>FINAL EXAMINATION FORMAT</b>		Number of Questions intended for this course      No. OF QUESTIONS      MARKS SECTION A (MCQ)      30      45 SECTION B (SA/SE)      2      55 <b>TOTAL MARKS</b> 100																															
<b>INSTRUCTION</b>																																	
ANSWER ALL QUESTIONS																																	
<b>COURSE LEARNING OUTCOME (CLO)</b>																																	
COURSE LEARNING OUTCOME (CLO)  1. Explain the fundamental programming constructs element (control structures, arrays, structures, functions and pointers) and articulate how they are used to develop a program. (C2, PLD1)																																	
<b>ASSESSMENT TAXONOMY COGNITIVE LEVELS (%)</b>  <table border="1"> <thead> <tr> <th rowspan="2"><b>LEVEL/SEMESTER</b></th> <th colspan="5"><b>SUGGESTED LEVEL</b></th> </tr> <tr> <th><b>C1 KNOWLEDGE</b></th> <th><b>C2 COMPREHENSION</b></th> <th><b>C3 APPLICATION</b></th> <th><b>C4 ANALYSIS</b></th> <th><b>C5 SYNTHESIS</b></th> <th><b>C6 EVALUATION</b></th> </tr> </thead> <tbody> <tr> <td>(SEM 1 &amp; 2)</td> <td>30 - 45</td> <td>55 - 70</td> <td>0</td> <td></td> <td></td> </tr> <tr> <td>(SEM 3 &amp; 4)</td> <td>15 - 40</td> <td>60 - 70</td> <td>0 - 20</td> <td></td> <td></td> </tr> <tr> <td>(SEM 5 &amp; 6)</td> <td>10 - 40</td> <td>60 - 70</td> <td>0 - 20</td> <td></td> <td></td> </tr> </tbody> </table>				<b>LEVEL/SEMESTER</b>	<b>SUGGESTED LEVEL</b>					<b>C1 KNOWLEDGE</b>	<b>C2 COMPREHENSION</b>	<b>C3 APPLICATION</b>	<b>C4 ANALYSIS</b>	<b>C5 SYNTHESIS</b>	<b>C6 EVALUATION</b>	(SEM 1 & 2)	30 - 45	55 - 70	0			(SEM 3 & 4)	15 - 40	60 - 70	0 - 20			(SEM 5 & 6)	10 - 40	60 - 70	0 - 20		
<b>LEVEL/SEMESTER</b>	<b>SUGGESTED LEVEL</b>																																
	<b>C1 KNOWLEDGE</b>	<b>C2 COMPREHENSION</b>	<b>C3 APPLICATION</b>	<b>C4 ANALYSIS</b>	<b>C5 SYNTHESIS</b>	<b>C6 EVALUATION</b>																											
(SEM 1 & 2)	30 - 45	55 - 70	0																														
(SEM 3 & 4)	15 - 40	60 - 70	0 - 20																														
(SEM 5 & 6)	10 - 40	60 - 70	0 - 20																														



By LimBP PBU

## 2.2.1 Perkara yang perlu dikenal pasti dalam FEIST

- 1. Jenis item (objektif / subjektif – struktur, esej)**
- 2. Kandungan kurikulum berkaitan agihan topik dan CLO (AST)**
- 3. Aras-aras kognitif**
- 4. Bilangan item dan markah mengikut aras kognitif**
- 5. Tempoh ujian – 2 jam**



By LimBP PBU

## 2.2.1 Perkara yang perlu dikenal pasti dalam FEIST

### 2. Taxonomy Cognitive Level

EFFECTIVE DATE	SEI JUN 2018
CODE & COURSE TITLE	DPF2073 PROGRAMMING FUNDAMENTALS
TEST PANEL	NORZAHM HANIFAH HASAN
DURATION (HOURS)	2
FINAL EXAMINATION FORMAT	MCO/SHORT ANSWER/ESSAY STRUCTURED QUESTION
Number of Questions intended for this course	NO. OF QUESTIONS
SECTION A (MCO)	30
SECTION B (SA/SE)	45
	TOTAL MARKS
	100
INSTRUCTION	ANSWER ALL QUESTIONS

LEVEL/SEMESTER	SUGGESTION TAXONOMY COGNITIVE LEVELS (%)				
	C1 KNOWLEDGE	C2 COMPREHENSION	C3 APPLICATION	C4 ANALYSIS	C5 SYNTHESIS
(SEM 1 & 2)	30 - 45	55 - 70	0	0	0
(SEM 3 & 4)	10 - 40	60 - 70	0	0	0
(SEM 5 & 6)	10 - 40	60 - 70	0	0	0

COURSE LEARNING OUTCOME (CLO)									
1. explain the fundamental programming constructs element (control structures, arrays, structures, functions and pointers) and articulate how they are used to develop a program. (C2, PLO1)									
2. apply programming constructs to realize a computer program with debugging techniques to achieve a working program. (C3, P3, PLO1, PLO2)									
3. solve computing problems using suitable algorithmic solutions and code these algorithmic solutions in a computer programming language. (C4, P3, A2, PLO2, PLO4)									

COURSE LEARNING OUTCOME (CLO)									
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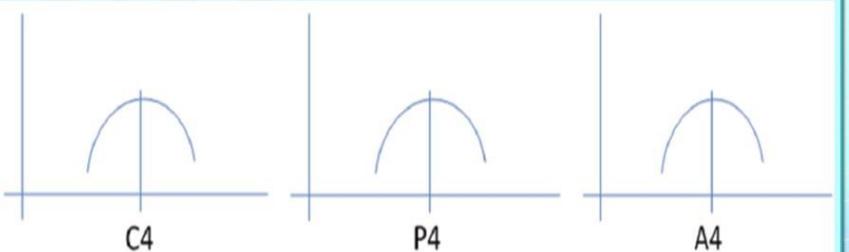
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## 2.2.1 Perkara yang perlu dikenal pasti dalam FEIST

### 2. Taburan Aras Kognitif, Psikomotor & Afektif

Degree (MQA) :



Item dominan berada pada aras C4, P4 & A4.  
Final Exam = Kognitif Shj.

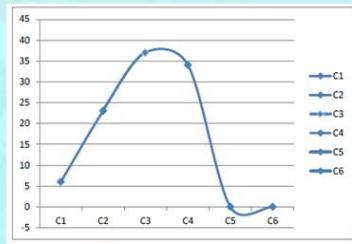
By LimBP PBU

## 2.2.1 Perkara yang perlu dikenal pasti dalam FEIST

### 2. Taxonomy Cognitive Level

Contoh Jadual Agihan bagi JKE

TAHUN/ SEMESTER	TAHAP TAKSONOMI KOGNITIF (%)		
	C1 : PENGETAHUAN C2 : PEMAHAMAN	C3 : APLIKASI C4 : ANALISIS	C5 : SINTESIS C6 : PENILAIAN
1 (SEM 1)	30 - 40	60 - 70	0
1 (SEM 2)	15 - 40	60 - 70	0 - 20
2 (SEM 3 & 4)	15 - 40	50 - 70	0 - 25
3 (SEM 5)	15 - 30	60 - 70	0 - 30



Item dominan berada pada aras C3

By LimBP PBU

# FEIST

## Agihan Aras Kognitif DBM2013 ENGINEERING MATHEMATICS 2

SEMESTER	TAHAP TAKSONOMI KOGNITIF (%)					
	C1	C2	C3	C4	C5	C6
SEM 2	30-40	60-70				

CLO1 - solve the ma  
(C3, LD1)  
CLO2 - show the sol  
(C3, LD1)  
CLO3 - practice mat

SEMESTER	TAHAP TAKSONOMI KOGNITIF (%)					
	C1	C2	C3	C4	C5	C6
SEM 2	40 - 60	40 - 60				

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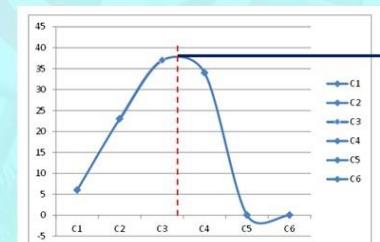
## TABURAN PERATUSAN MARKAH MENGIKUT ARAS KOGNITIF BAGI SETIAP TAHAP

JTMK

EFFECTIVE DATE	05/06/2018		
CODE & COURSE TITLE	DBM2013 PROGRAMMING FUNDAMENTALS		
FEIST PANEL	NORZMAH CHE HASSAN		
DURATION (HOURS)	2		
MCQ/SHORT ANSWER/ ESSAY STRUCTURED QUESTION			
FINAL EXAMINATION FORMAT	Number of Questions intended for this course	NO. OF QUESTIONS	MARKS
SECTION A (MCQ)	30	45	
SECTION B (SA,E)	2	55	
	TOTAL MARKS		100
INSTRUCTION	ANSWER ALL QUESTIONS		

LEVEL/SEMESTER	SUGGESTION TAXONOMY COGNITIVE LEVELS (%)					
	C1 KNOWLEDGE	C2 COMPREHENSION	C3 APPLICATION	C4 ANALYSIS	C5 SYNTHESIS	C6 EVALUATION
(SEM 1 & 2)	30 - 45	55 - 70	0			
(SEM 3 & 4)	10 - 40	60 - 70	0 - 20			
(SEM 5 & 6)	10 - 40	60 - 70	0 - 20			

COURSE LEARNING OUTCOME (CLO)



Item dominan berada pada aras C3



By LimBP PBU

## **TABURAN PERATUSAN MARKAH MENGIKUT ARAS KOGNITIF BAGI SETIAP TAHAP**

FEIST JTMK

EFFECTIVE DATE	15/01/2018			
CODE & COURSE TITLE	DFC203 PROGRAMMING FUNDAMENTALS			
FEEST PANEL	NORZIMAH CHE HASSAN			
DURATION (HOURS)	2			
<b>MCO/SHORT ANSWER/ ESSAY STRUCTURED QUESTION</b>				
Number of Questions intended for this course		NO. OF QUESTIONS	MARKS	
<b>SECTION A (MCO)</b>		30	45	
<b>SECTION B (SA,SE)</b>		2	55	
		<b>TOTAL MARKS</b>		<b>100</b>
<b>INSTRUCTION</b>	<b>ANSWER ALL QUESTIONS</b>			

LEVEL/SEMESTER	SUGGESTION TAXONOMY COGNITIVE LEVELS (%)					
	C1: KNOWLEDGE	C2: COMPREHENSION	C3: APPLICATION	C4: ANALYSIS	C5: SYNTHESIS	C6: EVALUATION
(SEM 1 & 2)	30-45	55-70				0
(SEM 3 & 4)	10-40	60-70			0-20	
(SEM 5 & 6)	10-40	60-70			0-20	

**COURSE LEARNING OUTCOME (CLO)**

					Q12-Q15	1	1.5		1	1.5	1	1.5	1	1.5		4.5		
CLO3	/	/	/	/	Q12-Q15			1	1.5	1	1.5	2	3		6			
					Q20-Q23			1	1.5	1	1.5	2	3		6			
					Q27-Q30				2	3	1	2	1	2		6		
					TOTAL MCQ	C4	12	C2	7.5	C3	18.5	C4	12		45			
					TOPIK/ RTA	JENIS SOALAN		C1	C2	C3	C4	C5	C6					
COURSE/LEARNING OUTCOME (CLO)	T1	T2	T3	T4	T5	BAHASAISAN B: STRUCTURED QUESTIONS (SQ)	BIL. ITEM	MARAKAH	AJARAN MATERI									
CLO1	/	/	/			G1(a)	1	2									2	
						G1(c)-(1d)	1	2	1	4						6		
						G1(f)	1	2								2		
						G1(b)			1	3						3		
CLO2	/	/	/			G1(e)				1	3					3		
						G1(f)-(2h)			1	2	1	3				5		
						G3(c)	1	2			1	4				2		
						G2(f)-(2b)	1	2			1	6	1	4		12		
CLO3	/	/	/			G2(a)-(2)b						1	6			6		
						G2(d)			1	2	1	6				8		
						G2(e)	1	2								2		
						TOTAL SQ	C4	12	C2	11	C3	22	C4	10		55		
						TOTAL C	C1	24	C2	18.5	C3	35.5	C4	22	C5	0	C6	0
						TOTAL	C1-C2	42.5		C3-C4	57.5				C5-C6	0	100	

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Analisis1 : Analisis Jadual Spesifikasi Ujian

Menentukan **taburan aras kognitif** kertas soalan peperiksaan akhir sesuatu kursus.

LANGKAH 2

Tentukan kata kerja dalam item tersebut.

1.

a) Strategic Management is all about gaining and maintaining a sustainable competitive advantage. List down 5 (FIVE) types of competitive advantages.

LANGKAH 4

Rekod aras kognitif soalan ke dalam Jadual Spesifikasi Ujian, JSU (*Template UiTM*).

By LimBP PBU

## Analisis 2 : Tahap kesesuaian Item PA (Validity Test)

#### **Item Yang Dinilai oleh Panel Luar :**

1. **Format** item bentuk objektif, subjektif & esei adalah bersesuian.
  2. **Kata tugas** item bersifat jelas.
  3. **Konteks item** bersifat jelas.
  4. Keseimbangan item meliputi LOT & HOT
  5. Aras Kesukaran
  6. Masa menjawab.
  7. Item menepati **keperluan pengajian**.
  8. Relevant dgn keperluan semasa



By LimBP PBU

## **2. Pembinaan Item Berkualiti**

- i) Format
  - ii) Taburan Aras Kognitif
  - iii) Tahap Kesukaran
  - iv) Kata Tugas & Konteks**
  - v) Masa Jawab
  - vi) Contoh



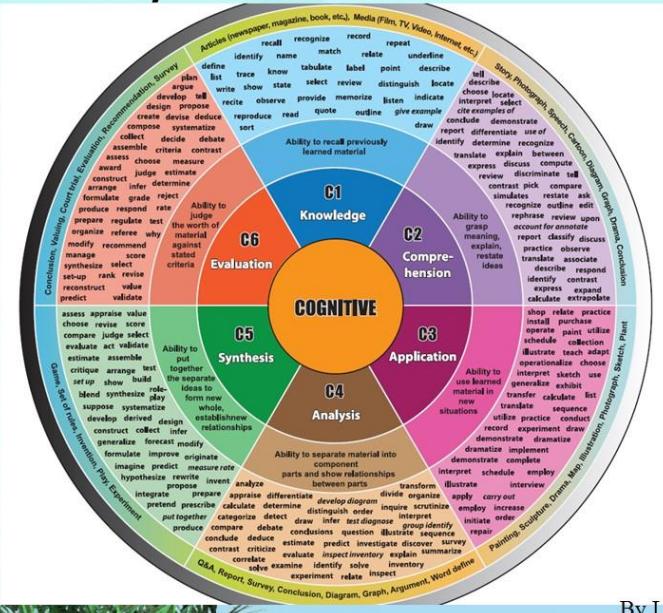
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## 2.3 Konteks & Kata Tugas

- Perkara yang diperlukan :
  - i. Syllabus
  - ii. FEIST
  - iii. Taxonomy Bloom
  - iv. Pass Year Questions
  - v. Modul Pembinaan Item Berkualiti

By LimBP PBU

### Taxonomy Bloom



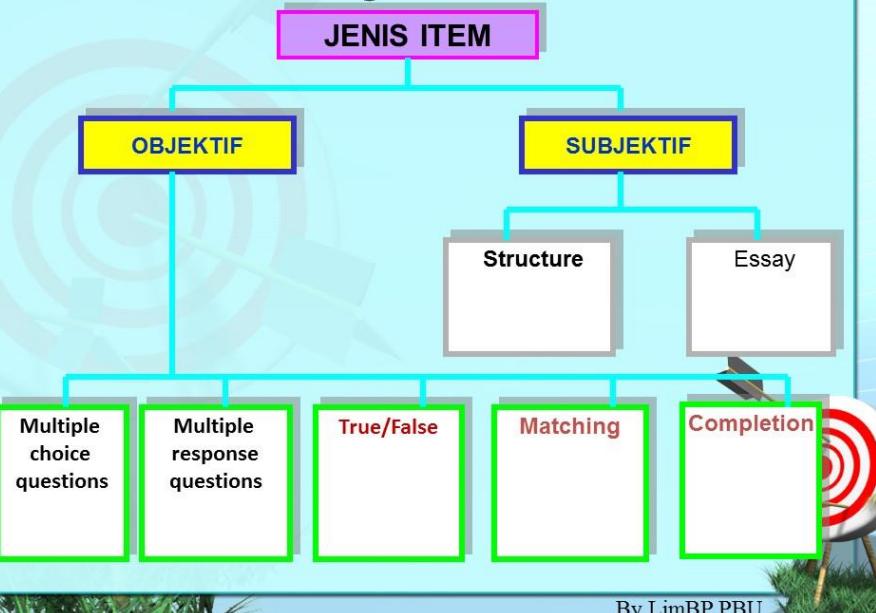
By LimBP PBU

## MODUL PEMBINAAN ITEM BERKUALITI POLITEKNIK

- MODUL DALAM PROSES EDITING
- DIBANGUNKAN OLEH TEAM MASTER TRAINER SENIOR DAN BPN
- DIJANGKA DAPAT DIEDARKAN PADA TAHUN 2019

By LimBP PBU

### 2.3 Konteks & Kata Tugas



By LimBP PBU

## 2.3 Konteks & Kata Tugas

### A) Pembinaan Item Objektif Multiple Choice Question

8. Identify which is NOT the type of looping control structure.  
*Kenalpasti yang manakah BUKAN jenis struktur kawalan gelung.*

- A. For
- B. If...else
- C. While
- D. Do....while

### Multiple Response Question :

- A. i and ii
- B. iii and iv
- C. i, iii and iv
- D. ii, iii and iv



By LimBP PBU

## 2.3 Konteks & Kata Tugas

### A) Pembinaan Item Objektif

### Multiple Response Question :

- A. i and ii
  - B. i and iv
  - C. ii and iii
  - D. iii and iv
- A. i and ii
  - B. i and iii
  - C. ii and iv
  - D. iii and iv

#### Note:

Arrange the options in **ascending order**, smallest Roman value to the biggest.

Limit the number of these type of item to **15% in a test.**

By LimBP PBU

## 2.3 A) Pembinaan Item Objektif

### MCQ : Stimuli, Stem & Distractor

1. Refer to the series circuit in Figure A1, find the bandwidth if the resonant frequency ( $f_r$ ) is 6kHz.

*Merujuk kepada litar sesiri dalam Rajah A1, dapatkan lebar jalur jika frekuensi resonan ( $f_r$ ) adalah 6kHz.*

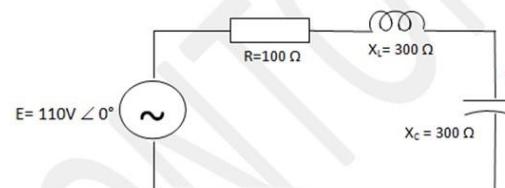


Diagram A1 / Rajah A1

- A. 1kHz
- B. 2kHz
- C. 4kHz
- D. 9kHz

**Distractor**

**Key**

**Distractor**

**Distractor**

**Stem**

**Stimulus**

By LimBP PBU

## 2.3 A) Pembinaan Item Objektif

### Stimuli, Stem & Distractor

Stimulus

**Textual or graphical / pictorial** information used to be the focal point of a question.

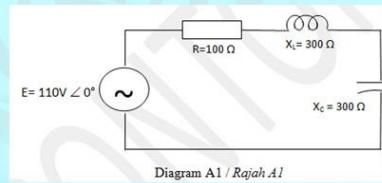


Diagram A1 / Rajah A1

**Stimulus**



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## 2.3 A) Pembinaan Item Objektif Stimuli, Stem & Distractor

### Stem

statement(s) needed to answer the item

- Refer to the series circuit in Figure A1, find the bandwidth if the resonant frequency ( $f_r$ ) is 6kHz.

Merujuk kepada litar sesiri dalam Rajah A1, dapatkan lebar jalur jika frekuensi resonan ( $f_r$ ) adalah 6kHz.

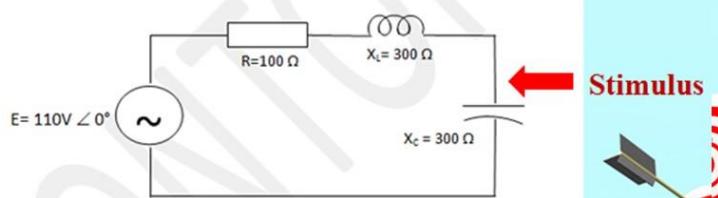


Diagram A1 / Rajah A1

By LimBP PBU

## 2.3 A) Pembinaan Item Objektif Stimuli, Stem & Distractor

### Distractor

wrong or partially wrong answers which do not meet the STEM

- A. 1kHz **Distractor**
- B. 2kHz **Key**
- C. 4 kHz **Distractor**
- D. 9kHz **Distractor**

**Key**  
The Only answer.

By LimBP PBU

## 2.3 A) Pembinaan Item Objektif General Step in Development Exam Items

- Developed with close reference to the FEIST.
  - Level of Difficulties
  - CLO
- Assess only what is covered in the Syllabus.
- Terminologies used must be IDENTICAL to the ones used in the Curriculum:
  - 2.3 **Apply operators and expression**
    - 2.3.1 Define operator.
    - 2.3.2 Explain the types of operators:
      - a. Assignment operators
      - b. Arithmetic operators
      - c. Increment and decrement operators (Unary)
      - d. Relational operators
      - e. Logical operators
      - f. Conditional operators
    - 2.3.3 Identify the syntax for each operator with example.
    - 2.3.4 Write expression using operators. Explain typecasting.
    - 2.3.5 Describe operators' precedence.



By LimBP PBU

## 2.3 A) Pembinaan Item Objektif General Step in Development Exam Items

- Avoid Negative stems. **Highlight** the NEGATIVE word if used.

Which of the following NOT belong to repetition statement.

- A. If else
- B. While
- C. For
- D. Do while

- Avoid using DOUBLE NEGATIVES in a question.

**Example :**

The following are good biological control EXCEPT:

- A. not saving labour cost
- B. not causing air pollution
- C. not easy to get suitable predator \*
- D. cannot discourage pests



By LimBP PBU

## 2.3 A) Pembinaan Item Objektif General Step in Development Exam Items

6. Do not use "All of the above" and "None of the above" as distractors.

- A. "all of the above",
- B. "none of the above",

7. Stem should **Not too lengthy** or given any **clue**.

8. We are not obliged to use verbs as in taxonomy Bloom only. More often than not, word-questions like **WHAT, WHICH, WHEN, WHERE and WHY** are used.

However, **do not overuse** any of the word-questions because it will make our item set **monotonous**.



By LimBP PBU

### 9. Provide partial or full answer in objective Question

Subjective Question :

Question 1

A) Write a program using "for" command to limit password input for 3 time.

Objective Question

:

```
#include<iostream.h>
main()
{
    for (int a=1; a<=3; a++)
    {
        cout<<endl;
        for (int b=1; b<=a; b++)
            cout<< "*\t";
    }
}
```

Figure A5 / Rajah A5

12. Identify the correct output for the program in **Figure A5**.  
*Kenalpasti output yang betul bagi aturcara dalam Rajah A5.*

A. \*  
\*\*

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## 2.3 A) Pembinaan Item Objektif General Step in Development Exam Items

10. All response options should be **grammatically consistent** with the stem.

An item in which options do not all follow grammatically from the stem is:

An electric transformer can be used:

- A. For storing electricity.
- B. To increase the voltage of alternating current.
- C. It converts electrical energy into mechanical energy.
- D. Alternating current is changed into direct current.

A better example for this question is:

An electric transformer can be used to:

- A. Store electricity.
- B. Increase the voltage of alternating current.
- C. Convert electrical energy into mechanical energy.
- D. Change alternating current to direct current.



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## 2.3 A) Pembinaan Item Objektif General Step in Development Exam Items

Question 1 :

Looking at the communication technology in the new millennium, a few advancements have been achieved. Which of the following is the invention of the great Alexander Graham Bell from Italy?

- A. Car
- B. Telephone
- C. Bridge
- D. Airplane



By LimBP PBU

## 2.3 A) Pembinaan Item Objektif General Step in Development Exam Items

Question 1 :

Looking at the **communication technology** in the new millennium, a few advancements have been achieved. Which of the following is the invention of the great Alexander Graham Bell from Italy?

- A. Car
- B. Telephone
- C. Bridge
- D. Airplane

What are the **weaknesses of the above example?**

- the **stem is too long** and contain **unnecessary info**;
- the **stem contains a clue** to the answer
- the **options are not homogeneous**; and



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## 2.3 A) Pembinaan Item Objektif General Step in Development Exam Items

Question 1 :

Looking at the **communication technology** in the new millennium, a few advancements have been achieved. Which of the following is the invention of the great Alexander Graham Bell from Italy?

- A. Car
- B. Telephone
- C. Bridge
- D. Airplane

**Which of the following is invented by Alexander Graham Bell?**

- A. Pager
- B. Telephone\*
- C. Telegraph
- D. Fax



By LimBP PBU

## 2. Pembinaan Item Berkualiti



- i) Format
- ii) Taburan Aras Kognitif
- iii) Tahap Kesukaran
- iv) Kata Tugas & Konteks**
- v) Masa Jawab
- vi) Contoh

By LimBP PBU

## 2.3 Kata Tugas & Konteks

### Obvious Mistake

DJJ5123: PNEUMATIC & HYDRAULICS

CLO1  
C3

- (b) List **FIVE (5)** basic components of the Hydraulic System and their functions.  
*Senaraikan LIMA (5) komponen asas Sistem Hidraulik beserta dengan fungsinya.*

[10 marks]  
[10 markah]

CLO2  
C4

- (c) Draw with a label the circuit for Open Center System operation in hydraulic system.  
*Lukis berserta dengan label litar bagi operasi "Sistem Pusat Terbuka" dalam sistem hidraulic.*

[10 marks]  
[10 markah]

By LimBP PBU

# KONSTRUK TIDAK TEPAT

## QUESTION 4 SOALAN 4

PBM2024: ADVANCE MATHEMATICS 2

CLO2  
C1

- a) Find the area of a region bounded by the straight line  $y = 3x - 5$ , the  $x$ -axis, the lines  $x = 2$  and  $x = 10$ .

*Cari luas kawasan yang dilingkungi oleh garis lurus ,  $y = 3x - 5$  paksi-x pada  $x = 2$  dan  $x = 10$*

[5marks]

[5markah]

CLO2  
C2

- b) i. Find the area of a region bounded by the curve,  $y = 2x - x^2$ , the  $x$ -axis , the lines  $x = 0$  and  $x = 2$

*Cari luas kawasan yang dilingkungi oleh lengkung ,  $y = 2x - x^2$  paksi-x pada  $x = 0$  dan  $x = 2$ .*

[8 marks]

[8markah]

By LimBP PBU



# Best Practice



Bring a notebook &  
Write IT Down



By LimBP PBU

# Best Practice

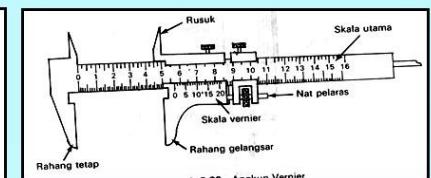
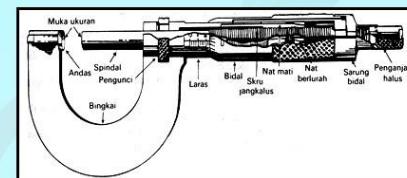
Ubah cara menyoal boleh meningkatkan aras bagi item respons terhad

1. Lakarkan sebuah angkup vernier dan namakan lima(5) bahagaiannya yang terdapat padanya. ( 5 markah )

2. Nyatakan DUA (2) kebaikan dan dua(2) keburukan menggunakan mikrometer. ( 4 markah )



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Tukarkan kepada soalan seperti berikut :

- Jelaskan persamaan dan perbezaan kedua-dua alat pengukur diatas ?



( 10 Markah )



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## 2. Pembinaan Item Berkualiti

- i) Format
- ii) Taburan Aras Kognitif
- iii) Tahap Kesukaran
- iv) Kata Tugas & Konteks
- v) **Masa Jawab**
- vi) Markah

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### JENIS ITEM DAN PERUNTUKAN MASA

JENIS-JENIS SOALAN	ANGGARAN PERUNTUKAN MASA SETIAP ITEM
Betul / Salah	20-30 Saat
Aneka Pilihan (Fakta)	40-60 Saat
Aneka Pilihan (Komplek)	70-90 Saat
Padankan (5 Stimulus / 6 Pilihan)	2-4 Minit
Soalan Pendek	2-4 Minit
Aneka Pilihan (Pengiraan)	2-5 Minit
Penyataan Masalah (Asas Matematik)	5-10 Minit
Esei Pendek	15-20 Minit
Analisa Data / Graf	15-25 Minit
Esei Panjang	35-50 Minit

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## Marks

- b) Acid rain can cause a great impact to human, environment and materials. Debate in detail environmental impact on acid deposition caused by acid rain.

### Answer

- i) Sterilization of lakes and forests. 2
- ii) Reducing the populations of small invertebrates and decomposers. 2
- iii) Reducing agricultural yields. 2
- iv) Causing extensive structural damage by corroding marble, metal, and stonework. 2
- v) Degrading water supplies by leaching heavy metals from the soil into drinking-water supplies. 2
- vi) Increases in lung cancer and colon cancer. 2

Total 10 marks  
Choose any 5 answer

2  
2  
2  
2  
2  
2

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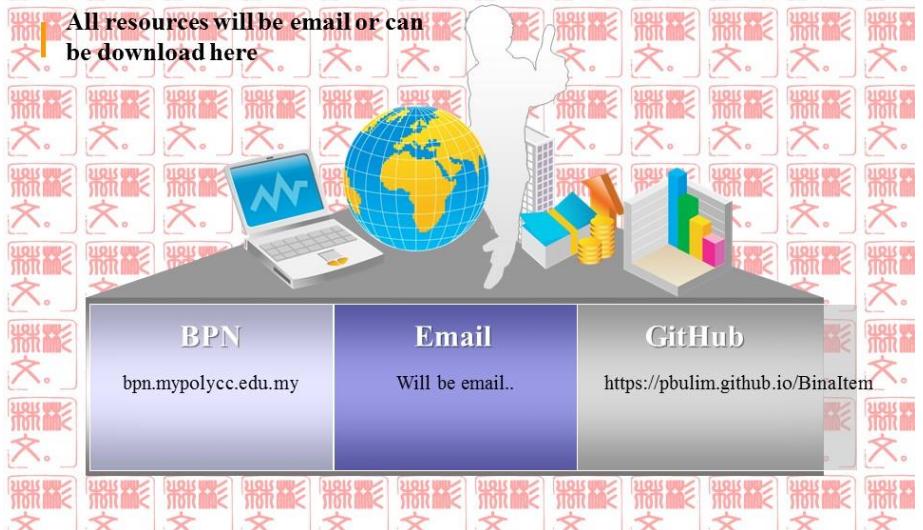
## The End

# Thank You !

By LimBP PBU

## Resources

All resources will be email or can be download here



BPN

bpn.mypolycc.edu.my

Email

Will be email..

GitHub

<https://pbulim.github.io/Binaltem>