Penyelesaian Lengkap

PRAKTIS 2

Kertas 1

1 $4 \times 8^3 = 2\,048$

Jawapan/*Answer*: **B**

2 Jawapan/*Answer*: **A**

3 $325_6 = (3 \times 6^2) + (2 \times 6^1) + (5 \times 6^0)$
$= 108 + 12 + 5$
$= 125_{10}$

Jawapan/*Answer* :**D**

4 **A**

2	180	
2	90	– 0
2	45	– 0
2	22	– 1
2	11	– 0
2	5	– 1
2	2	– 1
2	1	– 0
	0	– 1

$= 10110100_2$

B

5	180	
5	36	– 0
5	7	– 1
5	1	– 2
	0	– 1

$= 1210_5$

C

8	180	
8	22	– 4
8	2	– 6
	0	– 2

$= 264_8$

D

6	180	
6	30	– 0
6	5	– 0
	0	– 5

$= 500_6$

Jawapan/*Answer*: **C**

5

8^3	8^2	8^1	8^0
3	1	0	1

$= 3101_8$

Jawapan/*Answer*: **D**

6 $1001100011_2 + 10111100_2 = 1100011111_2$

Jawapan/*Answer*: **D**

7 Nilai tempat/*Place value* = $5^2 = 25$
Nilai nombor/*Number value* = $4 \times 5^2 = 100$

Jawapan/*Answer*: **A**

8 $124_5 = (1 \times 5^2) + (2 \times 5^1) + (4 \times 5^0)$
$= 39_{10}$

$148_9 = (1 \times 9^2) + (4 \times 9^1) + (8 \times 9^0)$
$= 125_{10}$

$39 + 125 = 164$

Jawapan/*Answer*: **A**

9 $S_5 = 234_7 - 25_7$
$= 206_7$

$206_7 = (2 \times 7^2) + (6 \times 7^0)$
$= 104_{10}$

5	104	
5	20	– 4
5	4	– 0
	0	– 4

Jawapan/*Answer*: **D**

10 $201_4 + 32_4 = 233_4$

4^2	4^1	4^0
2	3	3

$p = 3, q = 2$
$p - q = 3 - 2 = 1$

Jawapan/*Answer*: **B**

11

8	205	
8	25	– 5
8	3	– 1
	0	– 3

$= 315_8$

Jawapan/*Answer*: **D**

12

A	12120_3	150_{10}
B	310_5	80_{10}
C	1210_4	100_{10}
D	113_8	75_{10}

Jawapan/*Answer*: **D**

13 $454_8 = (4 \times 8^2) + (5 \times 8^1) + (4 \times 8^0)$
$= 300_{10}$

$1300_5 = (1 \times 5^3) + (3 \times 5^2)$
$= 200_{10}$

Harga tiket/*Ticket price*
= RM300 + RM200
= RM500

Jawapan/*Answer*: **B**

14 $1004_6 = (1 \times 6^3) + (4 \times 6^0)$
$= 220_{10}$
Selepas diskaun/*After discount*
$= \frac{75}{100} \times 220$
$= \text{RM}165$

$541_6 = (5 \times 6^2) + (4 \times 6^1) + (1 \times 6^0)$
$= 205_{10}$

Baki/*Balance* = RM205 – RM165
= RM40

6	40		
6	6	–	4
6	1	–	0
	0	–	1

$= 104_6$

Jawapan/*Answer*: **A**

15 Kuning/*Yellow* = 300 – 150 – 60 = 90

3	90		
3	30	–	0
3	10	–	0
3	3	–	1
3	1	–	0
	0	–	1

$= 10100_3$

Jawapan/*Answer*: **C**

Kertas 2

Bahagian A

1 Nilai tempat/*Place value* = $7^2 = 49$
Nilai nombor/*Number value* = $2 \times 7^2 = 98$

2 (a) (i) $(3 \times 4^3) + (3 \times 4^2) + (3 \times 4^1) + (3 \times 4^0)$
$= 255_{10}$
(ii) $(1 \times 5^2) + (2 \times 5^0) = 27_{10}$
(b) $(6 \times 7^1) + (6 \times 8^3) = 3114$

3 (a) $1803_9 = (1 \times 9^3) + (8 \times 9^2) + (3 \times 9^0)$
$= 1380_{10}$

4	1380		
4	345	–	0
4	86	–	1
4	21	–	2
4	5	–	2
4	1	–	1
	0	–	1

$= 112210_4$

(b) $2041_6 - 324_6 = 1313_6$

4 $1300_5 = (1 \times 5^3) + (3 \times 5^2)$
$= 200_{10}$
$202_7 = (2 \times 7^2) + (2 \times 7^0)$
$= 100_{10}$

Masa/*Time* $= \frac{200}{100}$
= 2 jam/*hours*

5 Faiza $= 154_7 = (1 \times 7^2) + (5 \times 7^1) + (4 \times 7^0)$
$= 88_{10}$

$13_5 = (1 \times 5^1) + (3 \times 5^0)$
$= 8_{10}$

Kavya = $88 + 8 = 96_{10}$

Jumlah markah/*Total marks* = 88 + 96 = 184

8	184		
8	23	–	0
8	2	–	7
	0	–	2

$= 270_8$

Bahagian B

6 (a) $10_2 = 2$, $11_2 = 3$, $100_2 = 4$, $1010_2 = 10$

$2y - 2x = 2$ …(1)
$4x - 3y = 10$ …(2)

$(1) \times 2$: $4y - 4x = 4$ …(3)

(3) + (2): $4y + (-3y) = 4 + 10$
$y = 14$

Gantikan $y = 14$ ke dalam (1):
Substitute $y = 14$ *into* (1):
$2(14) - 2x = 2$
$28 - 2x = 2$
$x = 13$

$\therefore x = 13, y = 14$

(b) $134_6 = 58_{10}$
$212_5 = 57_{10}$
$306_7 = 153_{10}$
$\therefore 212_5, 134_6, 108_{10}, 306_7$

7 (a)

7	188		
7	26	–	6
7	3	–	5
	0	–	3

$= 356_7$

5	188		
5	37	–	3
5	7	–	2
5	1	–	2
	0	–	1

$= 1223_5$

$p = 3, q = 6, r = 2$
$(q - p)r = (6 - 3)(2) = 6$

(b) 1010110_2
$= (1 \times 2^6) + (1 \times 2^4) + (1 \times 2^2) + (1 \times 2^1)$
$= 86_{10}$
$64_8 = (6 \times 8^1) + (4 \times 8^0)$
$= 52_{10}$
$86_{10} - 52_{10} = 34_{10}$

4	34		
4	8	–	2
4	2	–	0
	0	–	2

$\therefore w = 202$

8 (a) Jejari/*Radius* $= 100_2 = (1 \times 2^2) = 4$ cm
Tinggi/*Height* = 4 + 4 = 8 cm
Isi padu silinder/*Volume of cylinder*
$= \frac{22}{7} \times 4^2 \times 8 = 402\frac{2}{7}\ \text{cm}^3$

(b) Isi padu jem/*Volume of jam*
$= 6200_8 = (6 \times 8^3) + (2 \times 8^2) = 3200_{10}$
Bilangan bekas/*Number of containers*
$= 3\,200 \div \frac{2816}{7} = 7.95 \approx 8$

$\therefore$ 8 bekas/*containers*

Bahagian C

9 (a) Jisim ikan/*Mass of fish*
$= 69 + 80 + 72 = 221$ kg

4	221		
4	55	–	1
4	13	–	3
4	3	–	1
	0	–	3

$\therefore 221 \text{ kg} = 3131_4$ kg

(b) Sewa bot/*Boat rental*
$= 1750_8$
$= (1 \times 8^3) + (7 \times 8^2) + (5 \times 8^1)$
= RM1 000

Harga sekilogram ikan
Price per kilogram of fish
$= 10_8 = (1 \times 8^1)$
= RM8

Jumlah harga ikan/*Total price of fish*
= RM8 × 221
= RM1 768

Keuntungan/*Profit*
= RM1 768 – RM1 000
= RM768

5	768		
5	153	–	3
5	30	–	3
5	6	–	0
5	1	–	1
	0	–	1

$\text{RM768} = \text{RM}11033_5$

(c) $\text{RM}31000_5 = (3 \times 5^4) + (1 \times 5^3)$
= RM2 000

Jumlah pendapatan
Total earning
= RM2000 + RM1000
= RM3000

Jisim minimum ikan yang perlu dijual
Minimum number of fish must be sold
$= \frac{3\,000}{8}$
= 375 kg

(d) $15_7 = (1 \times 7^1) + (5 \times 7^0) = 12_{10}$
$11_2 = (1 \times 2^1) + (1 \times 2^0) = 3_{10}$
$12_5 = (1 \times 5^1) + (2 \times 5^0) = 7_{10}$

Teoh = 69 + 12 = 81
Lim = 80 + 3 = 83
Taufiq = 72 + 7 = 79

$\therefore$ Lim, Teoh, Taufiq