



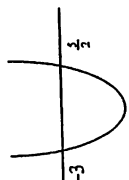
MODUL PENINGKATAN PRESTASI TINGKATAN 5
TAHUN 2014

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ADDITIONAL MATHEMATICS
MARKING SCHEME
Paper 1

MODUL 2

Question	Solution/ Marking Scheme	Answer	Marks
1	(a) B1 : $m = 3$ or $n = 2$	(a) $m = 3$ AND $n = 2$	2
		(b) many - to - one	1
2	B2 : $\left(\frac{6}{p}\right) = f(3)$ or $\frac{6}{p} = 12$ B1 : $f^{-1}\left(\frac{6}{p}\right) = 3$	$p = \frac{1}{2}$	3
3	(a) B1 : $2 - 3y = 3$	(a) $g(3) = -\frac{1}{3}$	2
	(b) B1 : $2 - 3(3-k) = 8$	(b) $k = 5$	2
4	B2 : $(p-1)(p-2) = 0$ or $p=1$ or $p=2$ B1 : $(2p)^2 - 4(1)(3p-2)$	$p=1$ AND $p=2$	3
5	(a) B1 : $p = -3$ or $q = -5$	(a) $p = -3$ AND $q = -5$	2
		(b) $x = -3$	1

Question	Solution/Marking Scheme	Answer	Marks
6	<p>B2: </p> <p>or $x = \frac{5}{2}, x = -3$</p> <p>B1: $(2x-5)(x+3)$</p>	$-3 \leq x \leq \frac{5}{2}$	3
7	<p>B2: $\frac{\log_2 16 + \log_2 h^3 + \log_2 k}{\log_2 8}$</p> <p>$\log_2 16$ or $\log_2 h^3$ or B1: $\log_2 k$ or $\log_2 8$</p>	$\frac{4 + 3a + b}{3}$	3
8	<p>B2: $1 + 2x - 2 = -6$</p> <p>B1: $7(7)^{2(x-1)}$ or $(7^{-3})^2$</p>	$-\frac{5}{2}$	3
9	<p>B3: $2 + 14(3)$</p> <p>B2: $\frac{26}{2}[2(2) + 25d] - \frac{18}{2}[2(2) + 17d] = 532$ or $d = 3$</p> <p>B1: $\frac{26}{2}[2(2) + 25d]$ or $\frac{18}{2}[2(2) + 17d]$</p>	44	4

Question	Solution/Marking Scheme	Answer	Marks
10	<p>(a) B1: $\frac{m}{m^2} = 1$</p> <p>(b) B1: $S_3 = \frac{8\left(1 - \left(\frac{1}{9}\right)^3\right)}{1 - \frac{1}{9}}$</p>	<p>(a) $m = 3$ AND $m = -3$</p> <p>(b) 91.123</p>	2
11	<p>B1: $r = \frac{1}{3}$</p>	$\frac{27}{2}$	2
12	<p>(a) B1: $xy = ax^2 + b$</p> <p>$13 = 7^*(2) + b$</p> <p>(b) B1: $3 = 2^*(2) + b$</p>	<p>(a) 2</p> <p>(b) $b = -1$</p>	2
13	<p>B2: $4[(x-3)^2 + (y-2)^2] = x^2 + (y-4)^2$</p> <p>B1: $\sqrt{(x-3)^2 + (y-2)^2}$ or $\sqrt{(x-0)^2 + (y-4)^2}$</p>	$3x^2 + 3y^2 - 24x - 8y + 36 = 0$	3
14	<p>B1: $\frac{1}{2}[(11x+4)(3x+2) + (kx+8)] - [(8x+3) + (kx+4) + (11x+2)] = 0$</p> <p>OR</p> <p>$\frac{8-4}{11-3} = \frac{4-2}{3-k}$</p>	$k = -1$	2

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Question	Solution/Marking Scheme	Answer	Mark
15	(b) B1 : $5 \text{ or } \sqrt{3^2+4^2}$	(a) $3i+4j$ (b) $\frac{3i+4j}{5}$	1 2
16	B3 : $6+2m=0$ OR $12+4m=0$ B2 : $\begin{pmatrix} 3 \\ 8 \end{pmatrix} + \begin{pmatrix} 3 \\ 4 \end{pmatrix} + \frac{m}{3} \begin{pmatrix} 6 \\ 12 \end{pmatrix} = \begin{pmatrix} 0 \\ 0 \end{pmatrix}$ B1 : $\overline{OB} = \begin{pmatrix} 6 \\ 12 \end{pmatrix}$	$m = -3$	4
17	B3 : $x = 41.81^\circ$ or $x = 138.19^\circ$ B2 : $-6\sin^2 x - 8\sin x + 8 = 0$ or $\sin x = -2$ or $\sin x = \frac{2}{3}$	$x = 41.81^\circ$ AND $x = 138.19^\circ$	4
18	(b) B2 : $\frac{1}{2}(12)^2 + (1.047) - \frac{1}{2}(6)(10.392)$ B1 : $\frac{1}{2}(12)^2 + (1.047)$ or $\frac{1}{2}(6)(10.392)$	(a) 1.047rad (b) 44.21	1 3

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Additional Mathematics Paper 1

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Question	Solution/Marking Scheme	Answer	Mark
19	(b) B1 : $\frac{*70+k}{8} = 11$	(a) 70 (b) $k=18$	1 2
20	B2 : $h'(1)=24-8$ B1 : $h'(x)=12x^2-8x+1$	16	3
21	B2 : $2k-8=-2$ or $x=3$ B1 : $2x-8$	$k=3$	3
22	B2 : $\frac{1}{5} \left[\frac{(3x+1)^2}{x-1} \right]_0^2$ or $\frac{1}{5} [49 - (-1)]$ B1 : $\int h(x) dx = \frac{(3x+1)^2}{x-1}$	10	3
23	(b) B1 : $\frac{2}{5} + \left(\frac{3}{5} \times \frac{2}{7} \right)$ or $1 - \left(\frac{3}{5} \times \frac{5}{7} \right)$	(a) $\frac{2}{5}$ (b) $\frac{4}{7}$	1 2
24	(b) B1 : ${}^4C_3 \times {}^3C_2 \times {}^2C_3$	(a) 495 (b) 120	1 2
25	B2 : $P(z>k) = 0.0608$ B1 : $P(z > 0.14) = 0.4443$	$k=1.548$	3

END OF MARKING SCHEME

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Additional Mathematics Paper 1

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