

*Additional
Mathematics
Paper 1*

August, 2018



**PEPERIKSAAN PERCUBAAN SPM
TAHUN 2018**

**ANJURAN
JABATAN PENDIDIKAN NEGERI KEDAH
MAJLIS PENGETUA SEKOLAH MALAYSIA (KEDAH)**

**ADDITIONAL MATHEMATICS
MARKING SCHEME
Paper 1**

MODUL 1

PEPERIKSAAN PERCUBAAN SPM TAHUN 2018

Marking Scheme

Additional Mathematics Paper 1

Question	Solution/ Marking Scheme	Answer	Marks
1	(b) B1: $ 2(-2) + q = 5$	(a) 0 (b) $q = 9$ atau $q = -1$	1 2
2	B1: (a) f and (b) g (both) or (c) $f^{-1}g^{-1}$	(a) f (b) g (c) $f^{-1}g^{-1}$	2
3	(b) B1: $\frac{1}{4} \left(\frac{x^2 - 4}{p} \right)$	(a) $f^{-1}(x) = \frac{x-4}{p}$ (b) $p = \frac{1}{12}$	1 2
4	B2 : $\alpha = \frac{1}{2}$ B1 : $3\alpha^2 = \frac{p}{2}$ and $\alpha + 3\alpha = 2$	$p = \frac{3}{2}$	3
5	(a) B1: $x^2 - 6x + \left(\frac{-6}{2}\right)^2 - \left(\frac{-6}{2}\right)^2 + k$ (b) B1: $k - 9 = 6$	(a) $(x-3)^2 + k - 9$ (b) $k = 15$	2 2
6	B1 $(x-4)(x+3) \geq 0$	$x \leq -3$, $x \geq 4$	2
7	(a) B1: $t = 8$ (b) B1: $2000(1.05)^8 \times \frac{13}{100}$	(a) RM2955 (b) RM384.14 / RM384.15	2 2

8	B3 : $\frac{\log_2 2r + 3\log_2 2^t - 5\log_2 2}{3}$ B2: $\frac{\log_2 m + \log_2 m^3 - \log_2 32}{\log_2 8}$ B1 : $\log_8 mn^3 - \log_8 32$	$\frac{r+3t-5}{3}$	4
9	(b) B1 : $\frac{1}{1-p} = \frac{5}{4}$	(a) $-1 < p < 1$ (b) $p = \frac{1}{5}$	1 2
10	B2: (RM) 120 and (RM)327.67 B1 : seen (RM) 120 or 327.67	Joni and RM207.67	3
11	B2: $\frac{(2x+1)(3x^2) - (x^3-7)(2)}{(2x+1)^2}$ B1 : $3x^2$ or 2	$\frac{4x^3 + 3x^2 + 14}{(2x+1)^2}$	3
12	B3 : $4\pi \times (-0.1)$ B2: $\frac{dV}{dh} = \frac{1}{4}\pi h^2$ B1 : $r = \frac{1}{2}h$ or $\partial h = -0.1$	-0.4π	4
13	(b) B1: $17 = 2(3k+1)$	(a) $\frac{y}{x} = 2(3x+1)$ (b) $k = \frac{5}{2}$	1 2

14	B2: $y - 6 = \frac{3}{20}(x - 10)$ B1: $m = \frac{3}{20}$	$y = \frac{3}{20}x + \frac{9}{2}$	3
15	B2: $\frac{2}{7} + \left(\frac{5}{7} \times \frac{5}{8} \times 0.4\right) + \left(\frac{5}{7} \times \frac{3}{8} \times 0.4\right)$ B1: $\left(\frac{5}{7} \times \frac{5}{8} \times 0.4\right)$ or $\left(\frac{5}{7} \times \frac{3}{8} \times 0.4\right)$	$\frac{4}{7}$	3
16	B2: $\cos \theta = -\frac{1}{2}$ or 60° seen B1: $\cot \theta = \frac{\cos \theta}{\sin \theta}$	$\theta = 120^\circ, 240^\circ$	3
17		(a) $p = 5$ (b) $q = \frac{4}{3}\pi$ (c) $m = \frac{3}{2}$	1 1 1
18	(a) B1: $\frac{2 + 2p + 10 + p + 10 + 18 + 3p + 14}{6}$ (b) B1: $18 - 2p = 12$	(a) $p = k - 9$ (b) $p = 3$	2 2

19	B3: $\frac{3}{2}j^2 - 2(\frac{1}{2}j^2(1.047))$ B2: $\frac{3}{2}j^2$ B1: $ST = \frac{3}{2}j \text{ or } \frac{1}{2}j^2(1.047)$	$j = 6$	4
20	B2: $r! = 6$ B1: $6\left(\frac{10!}{r!(10-r)!}\right) = \frac{10!}{(10-r)!}$	3	3
21	B2: $n = -3 \text{ atau } m = 8$ B1: $2 - 4 - n = 1 \text{ atau } -3 + m - 4 = 1$	$n = -3 \text{ and } m = 8$	3
22		(a) $\overrightarrow{HA} = \overrightarrow{ED}$ (b) $\underline{a} + \underline{b} - \underline{c}$	1 1
23	B2: $\frac{1}{2}(11)(3) - 7.5$ B1: $\frac{1}{2}(8+3)(3)$	9	3

24	B2 : 2 turus betul termasuk turus untuk $x = 1$ atau $x = 2$ B1: { 0, 1,2,3} atau 0.432 dan 0.288	<table><tr><th>x</th><th>$P(X=x)$</th></tr><tr><td>0</td><td>0.216</td></tr><tr><td>1</td><td>0.432</td></tr><tr><td>2</td><td>0.288</td></tr><tr><td>3</td><td>0.064</td></tr></table>	x	$P(X=x)$	0	0.216	1	0.432	2	0.288	3	0.064	3
x	$P(X=x)$												
0	0.216												
1	0.432												
2	0.288												
3	0.064												
25	(b) B2: $\frac{x-16}{5}=0.45$ B1: $h=0.45$	(a) $z = \frac{x-\mu}{\sigma}$ (b) 18.25	1 3										

END OF MARKING SCHEME