KEMENTERIAN PENDIDIKAN
JABATAN PENDIDIKAN NEGERI PERAK

MODUL BLUE DIAMOND

Matematik Tambahan

TINGKATAN 5

Bab 5

TABURAN KEBARANGKALIAN
(*Probability Distribution*)

SKEMA JAWAPAN

JABATAN PENDIDIKAN NEGERI PERAK
We Deliver

SKEMA JAWAPAN KERTAS 1

NO.	BUTIRAN			PECAHAN MARKAH	JUMLAH
1	(*a*)	(i)	$p = 1$ $q = 0$	**1** **1**	
		(ii)	1 – 2 P(Z > 1) 1 – 2 (0.1587) 0.6826	 **1** **1**	
	(*b*)		$\frac{70-\mu}{\sigma} = 1.645$ @ $\frac{40-\mu}{\sigma} = 0.385$ $70 - (40 - 0.385\sigma) = 1.645\sigma$ @ $40 - (70 - 1.645\sigma) = 0.385\sigma$ $\mu = 30.83$ $\sigma = 23.81$	**1** **1** **1** **1**	**8**

Sumber : Ticket To Victory 1 | Kertas 1 | Set 2 | Soalan 14

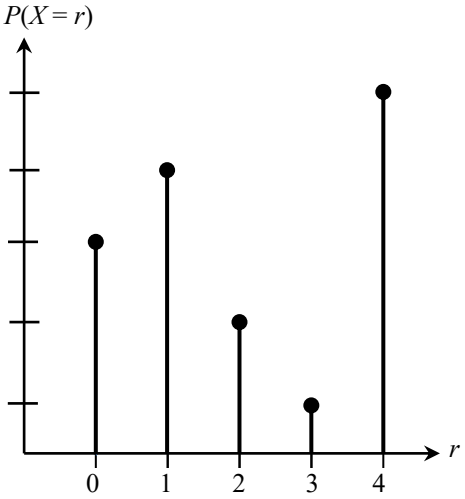
NO.	BUTIRAN			PECAHAN MARKAH	JUMLAH
2	(a)		**Situasi 1- Diskret** Pembolehubah mempunyai bilangan yang boleh dikira dalam bentuk integer positif. **Situasi 2- Selanjar** Pembolehubah bukan dalam bentuk integer & nilainya berada dalam satu selang.	**1** **1** **1**	
	(b)	(i)	$\mu_1 < \mu_2$ – semakin besar nilai μ,semakin ke kanan graf itu.	**1**	
		(ii)	$\sigma_1 < \sigma_2$ - Semakin besar nilai σ, semakin besar serakan taburan normal. Semakin berkurang nilai σ, semakin tinggi graf.	**1** **1**	**6**

Sumber : Ticket To Victory 2 | Kertas 1 | Set 1 | Soalan 1

NO.		BUTIRAN	PECAHAN MARKAH	JUMLAH
3	(a)	Min = 64 Varians = 12.8 Sisihan piawai = 3.578	**1** **1** **1**	**6**
	(b)	${}^{10}C_9(0.7)^9(0.3)^1 \quad atau \quad {}^{10}C_{10}(0.7)^{10}(0.3)^0$ ${}^{10}C_9(0.7)^9(0.3)^1 + {}^{10}C_{10}(0.7)^{10}(0.3)^0$ 0.1493	**1** **1** **1**	

Sumber : Ticket To Victory 2 | Kertas 1 | Set 2 | Soalan 10

NO.			BUTIRAN	PECAHAN MARKAH	JUMLAH
4	(a)		Pemboleh ubah rawak diskret: II, III Pemboleh ubah rawak selanjar: I, IV	**1 , 1**	**8**
	(b)	(i)	$\frac{p-3}{5}+\frac{p-2}{8}+\frac{3}{16}+\frac{2p-7}{20}+\frac{p+1}{16}=1$ 4	**1** **1**	
		(ii)	$\frac{1}{5}+\frac{1}{20}+\frac{5}{16}$ $\frac{9}{16}$	**1** **1**	

		(iii)		**1 , 1**	

Sumber : Modul Gempur | Kertas 1 | Set 1 | Soalan 13

NO.	BUTIRAN	PECAHAN MARKAH	JUMLAH
5	$\frac{75-\mu}{\sigma}=1.281$ atau $\frac{40-\mu}{\sigma}=0.385$ $75-\mu=1.281\sigma$ --(1) $40-\mu=0.385\sigma$ --(2) $75-(40-0.385\sigma)=1.281\sigma$ $\sigma=39.06$ Ganti σ=39.06 into eq (1) or (2) and solve $\mu=24.96$	**1** **1** **1** **1** **1**	**5**

Sumber : Modul Gempur | Kertas 1 | Set 2 | Soalan 3

SKEMA JAWAPAN KERTAS 2

NO.	BUTIRAN			PECAHAN MARKAH	JUMLAH
1	(*a*)	(i)	$p = \frac{2}{3}$	1	
		(ii)	$P(X < 7) = 1 - P(X = 7) - P(X = 8) - P(X = 9)$	1	
			$1 - {}^9C_7\left(\frac{2}{3}\right)^7\left(\frac{1}{3}\right)^2 - {}^9C_8\left(\frac{2}{3}\right)^8\left(\frac{1}{3}\right)^1 - {}^9C_9\left(\frac{2}{3}\right)^9\left(\frac{1}{3}\right)^0$	1	
			0.6228	1	
	(*b*)	(i)	$Z = \frac{5.5 - 5.0}{1.2}$	1	
			0.3384	1	
			33.84 %	1	
		(ii)	–0.385	1	
			$-0.385 = \frac{q - 5.0}{1.2}$	1	
			$q = 4.538$	1	10

Sumber : Ticket To Victory 1 | Kertas 2 | Set 2 | Soalan 8

NO.	BUTIRAN			PECAHAN MARKAH	JUMLAH
2	(*a*)	(i)	$\mu = 250$	1	
			$P\left(Z > \frac{298 - 250}{\sigma}\right) = 0.2611$	1	
			$0.64 = \frac{298 - 250}{\sigma}$	1	
			$\sigma = 75$	1	
		(ii)	$P(-0.667 < Z < 0.2)$	1	

NO.	BUTIRAN			PECAHAN MARKAH	JUMLAH
			$1-0.2523-0.4207$	1	
			0.327	1	
			26 orang	1	
	(*b*)		$1.175=\frac{q-250}{75}$	1	
			338	1	10

Sumber : Ticket To Victory 1 | Kertas 2 | Set 3 | Soalan 8

NO.	BUTIRAN			PECAHAN MARKAH	JUMLAH
3	(a)		$^nC_1\left(\frac{1}{2}\right)^1\left(\frac{1}{2}\right)^{n-1} = {}^nC_2\left(\frac{1}{2}\right)^2\left(\frac{1}{2}\right)^{n-2}$	1 , 1	
			$n=\frac{n}{(n-2)!2}$ atau $\frac{(n-1)!}{(n-2)!}=2$	1	
			$n(n-3)=0$ atau $n-1=2$	1	
			$n=3$	1	
	(b)	(i)	$\frac{V-350}{12}=0.44$	1	
			$V=355.28$	1	10
		(ii)	$1-P(Z<-2.5)-P(Z>3)$	1	
			$\left(\frac{320-350}{12}<Z<\frac{386-350}{12}\right)$	1	
			0.99244	1	

Sumber : Ticket To Victory 2 | Kertas 2 | Set 1 | Soalan 9

NO.	BUTIRAN			PECAHAN MARKAH	JUMLAH
4	(a)	(i)	$\mu = np$ $4.5 = 6 \times p$ $p = 0.75$	 1 1	10
		(ii)	$P(X \geq 1) = 1 - P(x < 1)$ $= 1 - P(x = 0)$ $= 6c_0(0.75)^0(0.25)^6$ $= 0.9998$	1 1 1	
	(b)	(i)	$P(X < 59) = P(Z < \frac{59-65}{12})$ $= P(Z < -0.15)$ $= 0.3085$	1 1	
		(ii)	$0.155 = P(X < \frac{m-65}{12})$ $1.015 = \frac{m-65}{12}$ $m = 77.18$	1 1 1	

Sumber : Ticket To Victory 2 | Kertas 2 | Set 2 | Soalan 11

NO.	BUTIRAN			PECAHAN MARKAH	JUMLAH
5	(*a*)	(i)	$1 - P(X = 0) - P(X = 1)$ $1 - {}^8C_0\left(\frac{3}{7}\right)^0\left(\frac{4}{7}\right)^8 - {}^8C_1\left(\frac{3}{7}\right)^1\left(\frac{4}{7}\right)^7$ 0.9204	1 1 1	
		(ii)	$\sqrt{n\left(\frac{3}{7}\right)\left(\frac{4}{7}\right)} = 11.5$	1	

			$n = 540$	**1**	
	(b)	(i)	$P\left(\frac{40-40}{12} < Z < \frac{60-40}{12}\right)$ 0.4522	**1** **1**	
	(b)	(ii)	$P(Z \geq \frac{m-40}{12}) = 0.58$ $\frac{m-40}{12} = -0.202$ $m = 37.58$	**1** **1** **1**	**10**

Sumber : Modul Gempur | Kertas 2 | Set 1 | Soalan 9

NO.			BUTIRAN	PECAHAN MARKAH	JUMLAH
6	(a)	(i)	$0.4052 - P(z \geq k) = 0.104$ $k = 0.52$	**1** **1**	
		(ii)	$\frac{500-510}{48} / \frac{515-510}{48}$ $1 - P(Z \leq -0.2083) - P(Z \geq 0.1042)$ 0.1240	**1** **1** **1**	
	(b)	(i)	$p = 0.52$, $q = 0.48$ ${}^{50}C_{15}(0.48)^{15}(0.52)^{35}$ 0.004276	**1** **1** **1**	
		(ii)	$\sqrt{(1500)(0.52)(0.48)}$ 19.35	**1** **1**	**10**

Sumber : Modul Gempur | Kertas 2 | Set 2 | Soalan 10