

2002 HIGHER SCHOOL CERTIFICATE EXAMINATION
Biology

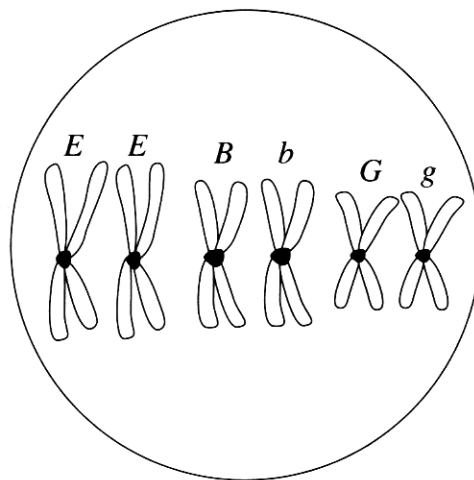
Section I – Part B (continued)

Marks

Question 22 (4 marks)

The diagram shows a cell containing three pairs of chromosomes just prior to a *meiotic* division.

4



Assuming that random segregation occurs, construct a table that lists the possible genotypes that could be produced and states the expected frequency for each genotype.

EE =

	E	E
E	EE	EE
E	EE	EE

Bb =

	B	b
B	BB	Bb
b	Bb	bb

Gg =

	G	g
G	GG	Gg
g	Gg	gg

Chromosomes	Genotypes	Frequency
E E	EE, EE, EE, EE.	3 males ^(75%) , 1 female (25%)
B b	BB, Bb, Bb, bb.	1 male (25%), 1 female (25%), 2 unknown (50%)
G g	GG, Gg, Gg, gg.	1 male (25%), 1 female (25%), 2 unknown (50%)