PENANG SANGAM HIGH SCHOOL

YEAR 12

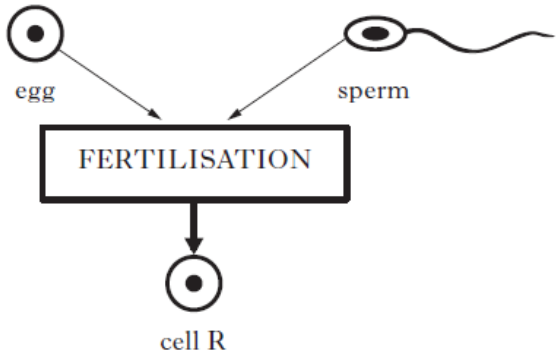
BIOLOGY

WORKSHEET NUMBER 6

QUESTIONS

(In order to answer question one, you need to define the process of fertilization)

1. The diagram below shows the process of fertilisation.



Cell R is
A a zygote
B a gamete
C an ovule
D an embryo.

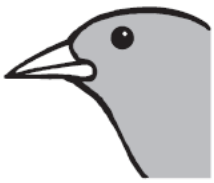
(Question 2 requires you to use your knowledge on the process of photosynthesis, the two stages of photosynthesis and the steps under each stage)

2. Decide if each of the following statements about photosynthesis is **True** or **False**, and tick (3) the appropriate box.
If the statement is **False**, write the correct word(s) in the **Correction** box to replace the word(s) underlined in the statement.

Statement	*True*	*False*	*Correction*
The first reaction in photosynthesis is called carbon fixation.			
Hydrogen is transferred from the first reaction to the second reaction.			
ADP is used as the energy source for the second reaction in photosynthesis.			

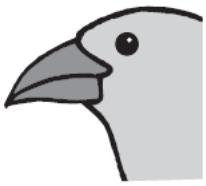
(Question 3 requires you to use the concept of adaptive radiation in order to answer)

3. The diagrams below give some information about three species of Darwin's Finches which live on the Galapagos Islands.



Feeds on insects

Feeds on seeds



Feeds on seeds

Using evidence from the diagrams, explain why these three finch species occupy different niches.

_____
_____
_____
_____

(Question 4 is based on the topic mono hybrid cross)

4. Sorghum is an important food crop in some parts of the world. The colour of the seed husk (coat) is controlled by a single gene. Purple husk colour (H) is dominant to tan husk colour (h).

(*a*) A true breeding purple husk plant is crossed with a true breeding tan husk plant.

(i) What other term is used in genetics to indicate true breeding?

Circle the correct term below.

heterozygous polygenic homozygous recessive

(ii) Complete the genotypes of the parental (P) generation below:

P purple X tan

P genotypes _____ _____

(iii) State the phenotype(s) of the F1 plants.

F1 phenotype(s)_____

(*b*) An individual from the F1 generation is crossed with a true breeding tan husk plant.

(i) Complete the Punnet square to show the expected results of this cross.

	Genotypes of gametes from F_1 plant	
Genotype of gametes from tan husk plant		

(ii) State the expected phenotype ratio for the offspring of this cross.

Purple_____

Tan _____

THE END