



INDIAN SCHOOL AL BURAIMI  
BIOLOGY WORKSHEET

NAME : .....  
STD : X

DATE: .....  
Worksheet 7

**TOPIC- HEREDITY**

1. Study carefully an incomplete checker board diagram depicting Mendel's dihybrid cross between plants with round and yellow coloured seeds and plants with wrinkled and green coloured seeds. **R** indicates factor for round seeds; **r** for wrinkled seeds; **Y** for yellow coloured seeds and **y** indicate green coloured of seeds in garden pea plants .Answer the following questions.

	RY	Ry	rY	ry
RY		A		
Ry				B
rY			C	
ry				D

- A. What characters Mendel noticed in F1?
- B. What characters the plants had at position A B C D in the checker board?
- C. How many new combination of characters appeared in F2 generation? Name them.

.....  
.....

- D. Which of the parental characters appeared in F2 generation and in what proportion?

.....  
.....

2. Write a monohybrid cross between pea plants homozygous for pink flower colour and white flower colour. Write the F<sub>2</sub> genotypic and phenotypic ratio.

3. A plant has two varieties, one with red petals and the other with white petals. When these varieties were cross-pollinated, all the offsprings have red petals.

a) Which gene is dominant? b) Choose suitable letters to represent the two genes.

.....  
.....

4. a) **E** is the gene for brown eye colour and **e** is the gene for blue eye colour. Which gene is recessive and which gene is dominant? .....

b) Both father and mother has the genes **Ee** in their cells. What colour are their eyes?

c) Which combination of genes in their zygote will produce children with blue eyes?

d) Which combinations of genes in their zygote will produce children with brown eyes?

.....

5. Mustard crops are growing in two fields A and B. While field A produced brown seeds, field B produced yellow seeds. It was observed that in field A, the offsprings showed only the parental trait for consecutive generations, whereas in field B, majority of the offsprings showed a variation in the progeny. What are the probable reasons for these?

.....

6. A person first crossed pure-breed pea plants having round-yellow seeds with pure-breed pea plants having wrinkled-green seeds and found that only A-B type of seeds were produced in the F<sub>1</sub>-generation. When F<sub>1</sub>-generation pea plants having A-B type of seeds were cross-bred by self-pollination, then in addition to the original round yellow and wrinkled green seeds, two new varieties A-D and C-B types of seeds were also obtained.

(i) What are A-B type of seeds? .....

(ii) State whether A and B are dominant traits or recessive traits.

(iii) What are A-D type of seeds?

(iv) What are C-B type of seeds?

(v) Out of A-B and A-D types of seeds, which one will be produced in

(a) minimum number in the F<sub>2</sub>-generation? - .....

b) maximum number in the F<sub>2</sub>-generation? - .....