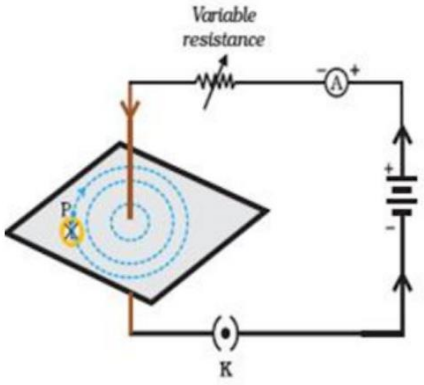
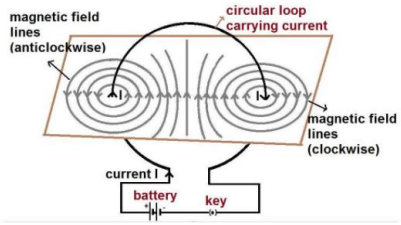
Roll Number		

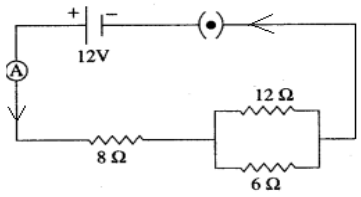
SET B

INDIAN SCHOOL MUSCAT
SECOND PRE - BOARD EXAMINATION
SCIENCE 086

CLASS: X TERM 2 Max.Marks: 40

MARKING SCHEME			
SET	QN.NO	VALUE POINTS	MARKS SPLIT UP
	1.	a.C b.B c.D d.A Each one carries ½ mark	(½+½+½+½)
	2.	a. 3rd member of alkane→Propane(½) 4th member of alkene→ Butene(½) b.C_3H_8O→Propanol(½) C_4H_6 →Butyne (½)	(1+1)
	3	(a) pollen grain (b) pollination by agents like wind, water or animals.(c) pollen tube carries male germ cell to ovule female germ cell in ovary.(d) ovule gets converted into seed	(1/2 mark each)
	4	(a) Placenta – The embryo gets nutrition from the mother's blood with the help of placenta. (b) This is because oral pills change the hormonal balance in the body. OR (a) Testis- produce sperms and testosterone hormone (b) This is because sperm formation requires a lower temperature than the normal body temperature.	(1 mark) (1 mark)
	5	(c) 20 J (d) Ten percent law of energy flow - According to Ten percent law , only 10 % of the energy entering a particular trophic level is available for the transfer to the next higher trophic level. OR Substances that break down by the action of bacteria/biological process are biodegradable wastes. Polythene bags, Aluminium can	(1 mark) (1 mark) (1 mark) (1/2+1/2)
	6	a)	1

		 b) Right hand thumb rule OR a)  b) Right hand thumb rule	1 1 1
	7	Budding Diagram	(1/2 mark) (1 ½ mark)
	8.	Each one point (1)	(1+1+1)
	9.	Each Structural Isomer along with name – (1 +1+1). (or) (i)Definition(1) (ii)Each example(½) (iii)Name (½)	(1+1+1) (1 +1½+½)
	10	Let yellow color trait be represented by: YY, green color trait be : yy Parental cross YY X yy F1 progeny Yy All yellow seeds F1 cross Gametes Y y x Y y F2 progeny YY Yy Yy yy Genotypic ratio is 3: 1 - 3 yellow color seeds and 1 green color seed Phenotypic ratio 1: 2: 1	(2 marks) (1 mark)
	11	a) Joule's law of heating states that the heat produced in a resistor is directly proportional to the square of current for a given resistance, directly proportional to resistance for a given current, and directly	1

		proportional to the time for which the current flows through the resistor. b) P= 80W V= 220V R= V^2/P =(220 x 220)/80 = 605 Ω When V = 110V P= V^2/R =(110 X 110)/605 = 20W	½ ½ ½ ½
	12	a) The resistivity of a conductor depends on nature of the material and temperature. b) $R_1 = \rho \frac{l}{A} = 4\Omega$ Now for second wire $R_2 = \rho \frac{l/2}{2A} = \frac{1}{4} \rho \frac{l}{A}$ $R_2 = \frac{1}{4} R_1$ $R_2 = 1\Omega$ The resistance of the new wire is 1Ω. OR a) The *SI* unit of current *is* ampere. If 1C of charge flows through a conductor in 1s then current produced is said to be 1A b)  $1/R_P = 1/R_2 + 1/R_3$ $= 1/6 + 1/12 = 3/12$ $R_P = 12/3 = 4\Omega$ Total resistance $R_S = R_1 + R_P = 8 + 4 = 12\Omega$ Total current $I = V/R_S$	1 ½ ½ ½ ½ 1 ½ ½ ½ ½

		= 12/12 =1A	
	13	(a) <u>Decomposers replenish the soil</u> – they break-down the complex organic substances into simple inorganic substances that go into the soil and are used up once more by the plants. /<u>They are cleansing agents of environment</u> – they act on dead bodies of plants, animals and break them into simple elements, puts them back into air, water and soil for re-use. (any 1 point) (b) Because it will allow harmful ultraviolet rays of sun to reach earth's atmosphere and cause damage to crops, skin cancer in humans, damage to eyes	(1 mark) (2 marks)
	14	(a) 23 pairs (b) 22+X or 22+Y (c) Females produce only one type of ovum with an X-chromosome and males produce two types of sperms (carrying either X or Y chromosome) in equal proportions. So the sex of a child is a matter of chance depending upon the type of sperm fertilizing the ovum (1mark) Flow chart (1 mark) OR (i) 46 chromosomes (ii) Sex chromosomes. (iii) Justification There is 50% probability of the birth of a boy when fertilisation of the ovum is with the sperm carrying Y chromosome. Because in Human males 50 per cent of the total sperm produced carry the X-chromosome and the rest 50 per cent has Y-chromosome.	(1mark) (1mark) (2 marks) (1/2 mark) (1/2 mark) (1mark)
	15	a) The displacement of the rod in the above activity suggests that a force is exerted on the current-carrying aluminium rod when it is placed in a magnetic field. It also suggests that the direction of force is also reversed when the direction of current through the conductor is reversed. (Any two) b) Fleming's left hand rule Fleming's left hand rule states that if we stretch the thumb, middle finger and the fore finger of the left hand in such a way that they are perpendicular to each other, then middle finger represents the direction of the current, fore finger represents the direction of the magnetic field and the thumb points towards the direction of force. c) An electric motor works on the principle that when a rectangular	1 1 1 1

		coil is placed in a magnetic field and a current is passed through it, a force acts on the coil which rotates it continuously. OR Split rings acts as a commutator in an electric motor	2