MP BOARD CLASS 10 ENGLISH MEDIUM
SAMPLE PAPERS SERIES
CLASS 10 SCIENCE MODEL PAPER 1 ANSWER
SECTION-A

SECTION-A

Ans.1.: 1-(c), 2-(b), 3-(c), 4-(d), 5-(a).

Ans.2. (i) H^+ (ii) Carbon, (iii) Chemical, (iv)Embryology, (v) The retina.

Ans.3. i-(c), ii-(a), iii-(e), iv-(b), v-(d)

Ans.4.(i) Gold and Silver, (ii) Parasitic, (iii) Red, (iv) $V=V_1+V_2+V_3$ (v)Aerosol.

SECTION-B

Ans.5. We observe, the colour of ferrous sulphate crystals is green before heating and it becomes colour less after heating.

$$2\ FeSo_4 \text{ ----heat----> } Fe_20_3+SO_2+SO_3$$

OR: When reactants react to form an insoluble compound that is precipitate are called precipitation reactions.

$$\text{e.g. } AgNO_3(aq) + NaCl(aq) - AgCl(s) + NaNO_3(aq) \text{ (white ppt)}$$

Ans.6. Noble gases are placed in a separate group because Noble gases are inactive do not resemble other elements and all of them show same properties.

OR: Modern periodic table remove various anomalies of Mendeleev's Periodic Table because Modern Periodic Table is based on the atomic number of elements, therefore

(i) Problem of isotopes was solved because isotopes have same atomic number.

(ii) Wrong order of Ar, K, CO, Ni was removed.

Ans.7. With the help of insects, birds, wind or water, the transfer of pollen grains from the anther of a stamen to the stigma of a carpel is called pollination. The fusion of a female gamete (sperm) with a female gamete (ovary) to from a zygote by sexual reproduction is called fertilization. So both processes are different from each other. ·

Ans. 7. OR: The male reproductive system in human beings consist of testes which produce sperms, vas deferens, seminal vesicles, prostate gland, urethra and penis.

Ans.8. We have to worry about this because if these tigers extinct then the genes of this species is lost and we can't get the genes of this species. The chance to get again this species back to life ends without their genes.

OR: The arrangement of organisms into series of groups based on the similarity of characters on physiology, anatomy, morphology and other relationship is called classification.

Ans.9. The paper burnt because the lens focused the sunrays at a point. Sunrays have energy. OR: A convex mirror is used as a rear-view mirror in vehicles because convex mirror can cover a wider range

and give erect and diminished image. Hence, convex mirror is used as a rearview mirror to get wider field of view.

Ans.10. (a) Oxidation: Gain of oxygen takes place or loss of hydrogen takes place.

e.g. 2 Mg(s) $+0_2$(g) ------Burning ---> 2Mg(s)

Mgis oxidized to Mgo

(b) Reduction: Loss ofoxygen takes place or gain of hydrogen takes place.

e.g. Cuo(s) $+H_2$(g)--------- heat-------> Cu(s)+H,0(8)

CuO is reduced to form Cu.

OR:

Ans. Photosynthesis is considered as endothermic reaction because energy is required to form glucose from carbon dioxide and water. Energy in the form of sunlight is also required to break the bonds of hydrogen and oxygen. Hence it is termed as endothermic reaction

Ans.11. The normal eye is not able to see clearly the objects placed closer than 25 cm because Ciliary muscles can contract the lens of humaneye to a certain limit because of which a person with normal vision can see the nearby objects clearly only if placed at 25 cm but if the objects is placed closer to the eye than it cannot see the objects clearly.

OR: (i) Cornea (ii) Iris (iii) Pupil (iv) Retina

Ans.(i) Cornea: Refraction of the light rays falling on the eye.

(ii) Iris: To control the size of the pupil.

(iii) Pupil: To regulate and control the amount of light entering the eye.

(iv)Retina: To act as a screen to obtain the image of object and generate electrical signals which are sent to the brain via optic nerves.

Ans:12. It is an instrument that can detect the presence of current in circuit. The pointer remains at zero for zero current flowing through it. It can defect either to the left or to the right of the zero mark depending on the direction of current

OR:

A solenoid is a coil of many circular turns of · insulated copper wire wrapped closely in the shape of a cylinder. On one end of the solenoid behaves as a magnetic north pole, while the other end behaves as the south pole. The field lines inside the solenoid are in the form of parallel straight lines. By taking a bar-magnet with known north poles near one end of the solenoid and if it shows repulsion then that end of solenoid is north pole and the other end is south pole: The property of magnet i.e., like poles. Repel and unlike poles attract is used for the determination of poles of solenoid

Ans:13. Magnitude of the induced current can be increased by:

(i) increasing the number of coils of the wire.

(ii) by increasing the power of magnet.

OR: To avoid overloading following precautions should be taken:

(i) Two separate circuit should be used one of 5A current and other 15A.

(ii) For both 5A and 15A circuits, fuse should be installed.
(iii) Parallel circuits should be used.
(iv) Never use too many electrical appliances at one point.

Ans.14. We are looking at alternate sources of energy because:
(i) The fossil reserves in the earth are limited which may get exhausted soon if continued to be used at the current rate.
(ii) The use of alternate sources of energy will reduce the pressure on fossil fuels making them last for a much longer time.
(iii) The pollution being caused by the burning of fossil fules can be avoided by using alternate sources of energy. OR: Charcoal is considered a better fuel than wood because:
(i) It has high calorific value.
(ii) It does not produce any smoke. Disadvantages:
(i) 1 kg of wood on destructive distillation produces only 0.25 kg of charcoal making it an expensive fuel.
(ii) For production of charcoal, more and more trees would have to be cut down which causes deforestation and disturbs the ecological balance of the earth.

Ans.15. Properties: Oxidising agent Uses:
(i) Oxidising agent: Used in chemical industries.
(ii) Bleaching: Used in bleaching cotton, wood pulp, clothes.
(iii) Disinfectant: To kill germs in drinking water.
OR:
Chloride salts ----- > Magnesium chloride, Calcium chloride
Carbonate salts-- > Sodium carbonate, Potassium carbonate
Sulphate salts ----> Calcium suphate, Magnesium sulphate

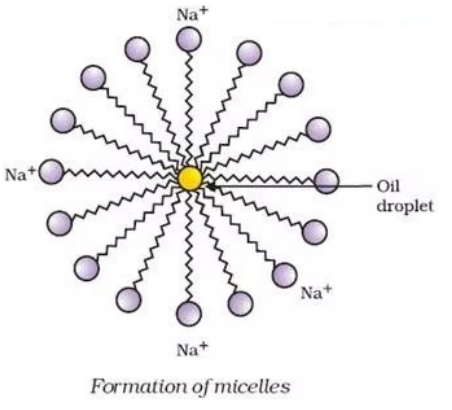
Ans.16. Homologous series is an group of rnembers of same class of organic compound havingsimilar chemical properties, and they also have same general formula. Also have same functional group. When arranged in the ascending order of molecular mass they differ by 14 a.m.uor-CH_2 group.

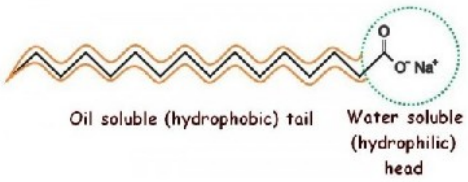
Example: Alkane
general formula- CnH_2n+2
Methane CH_4
Ethane - C_2H_6 CH2
Propane C_3H_8
Butane C_4H_{10}

OR:
The molecule of soap has two ends, the charged end that gets attracted towards water is called hydrophilic and the long carbon chain that repels water is called hydrophobic tail. :

When soap is dissolved in water, the carbon chain i.e., hydrophobic end gets attracted towards the oil, dirt and grease. The hydrophilic end stays away from this. The micelle formation takes place. The tail entagles dirt, oil or grease, if required, the agitation is done. Lotofrinsing is done with water so that water

molecules attract charged (Na+) end and carries the soap molecules with dirt attached to it and clean the clothes, utensils, etc.





Ans.17. The amount of urine largely depends on the amount of water reabsorbed. When there is a hot day, we sweat and lose a lot of body water and salts, most of the water and salts in kidney will be reabsorbed into blood from the filtrate in the tubule. Thus the volume of urine produced will be less. When we do not sweat a lot in winters, a little water and salts will be reabsorbed and the volume of urine produced will be more.

Thus, there is perfect osmoregulation in the body

OR:

	Alveoli	Nephron
1.	The structural and functional unit of lungs is called Alveoli.	The structural and functional unit of kidneys is called Nephron.
2.	Thin walled, has a large surface area and is richly supplied with blood vessels.	Thin walled has a large surface area & is richly supplied with blood vessels.
3.	Removes carbon dioxide from the blood	Removes nitrogenous wastes from the blood.

Ans.18. The main function of receptors is to detect information from the environment. These receptors are located in our sense organs. There are some situations where receptors do not work properly, like mouth starts watering when we feel hungry, touching a flame, knee-jerk, etc.

In these situations, they take enough time if these are done by the brain. To solve these problems, the nerves move muscles in a simpler way. This is done by the spinal cord.

OR: Tropic movements are directional movement which are either towards the stimuli or away from it.

(i) Phototropism, Geotropism, Hydrotropism, Chemotropism.

(ii) Phototropsim: Movement is in response to light: stem positive, root negative.

(iii) Geotropism: Movement is in response to gravity: stem negative, root positive.

(iv) Hydrotropism: Movement in response to water: stem negatie, root positive.

(v) Chemotropism: Growth of pollen tubes towards ovules.

Ans.19.

	Conductors	Insulators
1	The materials that allow electricity to. pass through are called conductors of electricity	Materials that do not allow electricity to pass through them
2	Materials have loosely bound free electrons.	Materials do not have loosely bound free electrons.
3	Example, metals and graphite (non-metal).	Example, non metals, rubber, plastic etc.

Ans. 19.OR

P=10W V=220V
I= ?
Using, I = P / V
=10/220 =1/22 A
If a number of bulbs connected to current of 5 A is n, then,
(1/22)n=5
N=5 x 22 =110
Therefore, 110 bulbs can be attached.

Ans.20. The Metals which lie above Hydrogen in the activity series i.e. Zn, Al, Mg can displaces hydrogen from dilute acids, because they are more reactive than H, Metals which lie below hydrogen in the activity series i.e. Cu, Ag, Au cannot displace hydrogen from dilute acids, because they are less reactive than hydrogen.
OR:
(a) Pt, Au and Ag are highly malleable, lustrous and ductile, so they are used in making jewelry.
(b) K, Na and Liare highly reactive metals, they react with oxygen present in air at room temperature and catches fire in presence of moisture. They don't react with oil
(Kerosene) hence stored in oil.
(c) To protect from corrosion, Aluminum form a protective layer of Aluminum oxide
(AL_20_3)on its surface.
(d) Reduction of metal oxides to metal is cheper and easier than the reduction of Carbonate and sulphide ores. So carbonate and sulphide ores are first converted to metal oxide and then further reduced to form metals.

Ans.21.

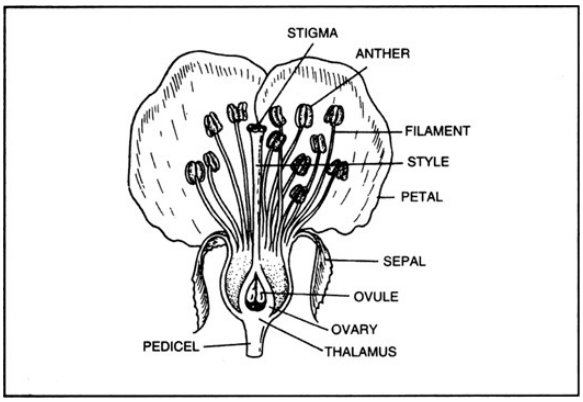


Fig. - L.S. of Flower

OR:

The method to avoid pregnancy is called contraception the method of contraception are a follows:
(1) Surgical methods: This includes vasectomy (sperm duct is removed) in male and tubectomy (removal of small portion of fallopian tube) in females. (2) Chemicals methods: Oral pills change the hormonal balance and stop release ofegg. Vaginal pills kill the sperms.. (3) Physical barrier methods: Condoms, diaphargns cervical caps can be used, these prevents the entryofsperms into the female genital tract by acting as a barrier between them.

Ans.22.
Convex mirror

1/f	=	1/v	+	1/u
1/15	=	1/v	+	1/-10
1/v	=	1/15	+	1/10
1/v	=	5/30 V		
	=	+6 cm		

The image is formed 6 cm. behind the mirror, virtual image is formed.

OR: The law of refraction are as follows:
1. The incident ray, the refracted ray and the normal at the point of incidence lie in the same plane.
2. For a particular wavelength (or color) of light the ration of sine of the angle of incidenced to the sine of angle of refraction is constant for a given pair of medium. This law is also called snalls law. If angle of incidence is i and angle of refraction is r then,

sin i / sin r = - = Constant t (snell's law)
This constant value is called the refractive index of the second medium with respect to the first.