



Rao IIT Academy

Symbol of Excellence and Perfection

JEE | MEDICAL-UG | BOARDS | KVPY | NTSE | OLYMPIADS

SSC - BOARD - 2018

Date: 16.03.2018

SCIENCE - PAPER-2 - SOLUTIONS

1 (A) (a) Rewrite the following statements with suitable words in the blanks : [2]

(i) There are pairs of chromosomes in human being.

Ans. There are 23 pairs of chromosomes in human being.

Topic: Mapping out genes; L-Easy_SSC Board Test_Science-P-II

(ii) is a functional group of alcohol.

Ans. -OH is a functional group of alcohol.

Topic: Amazing world of carbon compounds; L-Medium_SSC Board Test_Science-P-II

(b) State whether the following statements are true or false : [2]

(i) There are two sets of chromosomes in zygote.

Ans. True

Topic: Mapping our genes; L-Easy_SSC Board Test_Science-P-II

(ii) All animals and fungi are autotrophs.

Ans. False

Topic: Life's internal secretes; L-Medium_SSC Board Test_Science-P-II

(c) Find the odd one out: [1]

Amoeba, Euglena, Planaria, Paramecium

Ans. Planaria is flatworm which belongs to phylum platyhelminthes.

Amoeba, Euglena, and Paramecium are protozoans.

Topic: The life cycle; L-Easy_SSC Board Test_Science-P-II

(B) Rewrite the following statements by selecting the correct options : [5]

1. Acetic acid

(a) is insoluble in water

(b) turns blue litmus red

(c) is pale yellow in colour

(d) none of the above

Ans. Acetic acid turns blue litmus red.

Topic: Amazing world of carbon compounds; L-Medium_SSC Board Test_Science-P-II

2. type of reproduction occurs in Hydra.
(a) Binary fission (b) Multiple fission (c) Budding (d) Fragmentation

Ans. Budding type of reproduction occurs in Hydra.

Topic: *The life cycle; L-Easy_SSC Board Test_Science-P-II*

3. Solution of Aluminium sulphate in water is
(a) Green (b) Colourless (c) Pink (d) Blue

Ans. Solution of Aluminium sulphate in water is colourless.

Topic: *Understanding metals and non-metals; L-Easy_SSC Board Test_Science-P-II*

4. Reaction of iron nail with copper sulphate solution is reaction.
(a) Combination (b) Displacement
(c) Double displacement (d) Decomposition

Ans. Reaction of iron nail with copper sulphate solution is Displacement reaction.

Topic: *The magic of chemical reaction; L-Easy_SSC Board Test_Science-P-II*

5. The loss of water in the form of water vapour through stomata on leaves is known as
(a) Distillation (b) Diffusion (c) Osmosis (d) Transpiration

Ans. The loss of water in the form of water vapour through stomata on leaves is known as Transpiration.

Topic: *Life internal secretes; L-Easy_SSC Board Test_Science-P-II*

Q.2 Answer the following questions (any five) :

[10]

1. Name four plant hormones.

Ans. Four plant hormones: Ethylene, Gibberellins, Auxins, Cytokinins, Abscisic acid (ABA)

Topic: *The regulators of life; L-Easy_SSC Board Test_Science-P-II*

2. Why are metals used for making cooking vessels?

Ans. Metals are good conductors and are chemically unreactive which makes them favourable to be used for making cooking vessels.

Topic: *Understanding metals and non-metals; L-Easy_SSC Board Test_Science-P-II*

3. Suggest control measures of noise pollution.

Ans. Lower the volume. Turn off appliances at home and offices. Shut the door when using noisy machines. Use earplugs.

Topic: *Striving for better environment (Part -I); L-Easy_SSC Board Test_Science-P-II*

4. What are alloys? Give two examples.

Ans. An alloy is a homogenous mixture of two or more metals or a metal and a non – metal in definite proportion.

Eg. i. Brass – copper and zinc. ii. Stainless steel – iron, nickel and chromium.

Topic: *Understanding metals and non-metals; L-Medium_SSC Board Test_Science-P-II*

5. Classify the following as voluntary actions and involuntary actions:

Sneezing, throwing ball, heart beats, writing.

Ans. Voluntary actions : Throwing ball, Writing.

Involuntary actions: Sneezing, Heart beats.

Topic:*The regulators of life; L-Easy_SSC Board Test_Science-P-II*

6. Name any four life processes in living things.

Ans. Life processes in living things are respiration, reproduction, excretion, Digestion.

Topic:*Life's internal secretes; L-Medium_SSC Board Test_Science-P-II*

Q.3 Answer the following questions (any five):

[15]

1. Population explosion is the root cause for depletion of natural resources. Explain.

Ans. Natural resources are those resources which are present in nature:

These are of two types:

(1) Renewable sources. Eg. Sun, Wind, Water etc.

(2) Non renewable sources: Minerals, metal arcs, fossil fuels etc.

This natural resources are of continuous use to mankind.

This resources are getting depleted due to many reasons, population explosion being the most common cause for depletion of natural resources.

Due to increase in population the demand of humans for food, clothing and shelter are increasing due to which forests or agricultural lands are cut.

Urbanisation also increases the need of minerals, metal ores etc.

Hence population results in depletion of resources which can be an alarming threat for future.

Topic:*Striving for better environment (Part - II); L-Medium_SSC Board Test_Science-P-II*

2. Human tail bone is a vestigial organ. Explain.

Ans. Vestigial organ are the remains of a structure that were functional in some ancestors but is no longer functional in the organisms.

In humans many vestigial structures show a relationship to other mammals including the primates.

Ancestors of human was having well developed tail bone as their adaptation was arboreal. But gradually humans got adapted to terrestrial habitat. So, there human tail bone is reduced (vestigial).

Topic:*Mapping out genes; L-Medium_SSC Board Test_Science-P-II*

3. What is anodising? Give its applications.

Ans. Anodising is an electrolytic passivation process used to increase the thickness of the natural oxide layer on the surface of metal parts. The process is called anodising because the part to be treated forms the anode electrode of an electrical circuit.

It is very useful in preventing the metal from corrosion. It is also useful in architectural finishing.

Topic:*Understanding metals and non-metals; L-Easy_SSC Board Test_Science-P-II*

4. Write the changes that occur in the age group 11 to 21 years in boys.

Ans. The changes that occur in the age group 11 to 21 years in boys are as follows:

Change in voice results due to growing vocal cords in males.

There is a hair growth in pubis area, armpits as well as the chest and the face.

The scrotum and the testicles start to grow when they reach puberty.

Topic: The regulators of life; L-Medium_SSC Board Test_Science-P-II

5. Name different types of neurons and give one function of each.

Ans. Types of Neurons as per their functions.

(a) Sensory Neurons – transmits impulses towards CNS from sensory organ through their axons.

(b) Motor Neurons – transmits impulses from CNS towards muscles or glands (effector organs)

(c) Mixed Neurons – Consists of both afferent and efferent axons. Conducts both incoming sensory information and outgoing muscles commands in the same bundle

Topic: The regulators of life; L-Medium_SSC Board Test_Science-P-II

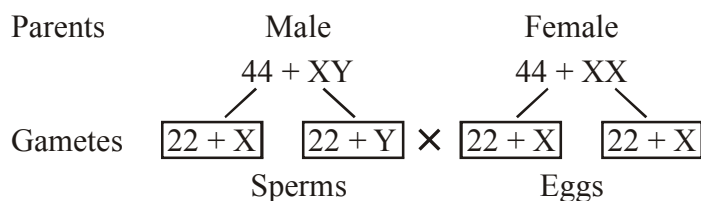
6. How is sex determined in the human beings?

Ans. In human being, male individual contains 'XY' chromosome whereas female individual contains 'XX' chromosome. Male produces two types of gametes i.e. X and Y, i.e. containing sperms.

Females produces only one type of gamete. X-containing eggs.

If a sperm carrying X chromosome fertilizes egg or ovum then the offspring will be female. If a sperm carrying 'Y' chromosome fertilizes egg or ovum carrying X chromosome then the offspring will be male child.

That shows, the sex of the child is determined by the type of sperm that fuses with ovum at the time of fertilization.



Checker Board

	♂	♀	
		22 + X	22 + X
Off spring	22 + X	44 + XX Female	44 + XX Female
	22 + Y	44 + XY Male	44 + XY Male

Topic: Mapping out genes; L-Medium_SSC Board Test_Science-P-II

Q.4 Answer any one of the following questions:

[5]

(1) What are covalent compounds? Write any three features and give two examples.

Ans. Covalent compounds are those where atoms share their electrons with other atom to form more stable structure.

Features:

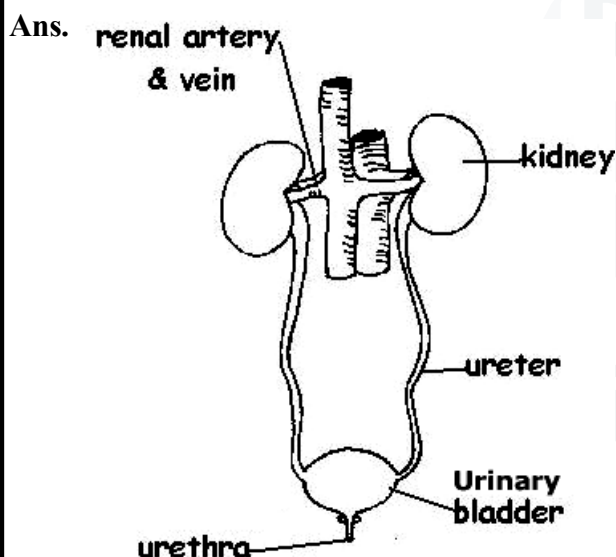
- (a) Covalent compounds possess a particular structure in space like tetrahedral, octahedral etc.
- (b) They are usually of low melting points and boiling points.
- (c) They are of poor electrical and thermal conductivity.

Examples: Methane (CH_4), Water (H_2O)

Topic: Amazing world of carbon compounds; L-Medium_SSC Board Test_Science-P-II

(2) Draw well labelled diagram of human excretory system. Write the functions of:

- (a) Kidney
- (b) Ureter
- (c) Urinary bladder



Functions:

- (a) Kidney : It helps in removal of nitrogenous wastes from body.
- (b) Ureter : It carries urine from the kidney to urinary bladder.
- (c) Urinary bladder : The bladder stores urine, allowing urination to be infrequent and voluntary.

Topic: Life's internal secretes; L-Medium_SSC Board Test_Science-P-II