Answers of Full Portion Test Series 2019 – 2020

BIOLOGY

Section I (40)

1.

a.

Name	Location	Function
Choroid layer	Between sclera and retina in the eye ball.	Gives nourishment and oxygen to the eye and Prevents reflection of light rays in the eye.
Bulbourethral gland	Open into the urethra just before it enters the penis.	The secretion serves as a lubricant.
DCT	In Cortex of kidney.	Active reabsorption of glucose, Na^+, K^+; Passive reabsorption of water and tubular secretion.
Corpus callosum	In between the 2 cerebral hemispheres.	It transmits impulses from one cerebral hemisphere to the other cerebral hemisphere.
Thyroid gland	It is in front of the neck just below the larynx.	It regulates basal metabolism and calcium metabolism.

b. i. Gestation period
ii. Mega karyocyte
iii. Genome
iv. Isotonic
v. Adrenaline

c. i. Chordae tendinae
ii. Labia majora and minora
iii. Optic nerve
iv. Urochrome
v. More DNA and chromosome duplicated.

d.

Odd		Category
i)	ABA	Pituitary hormones in animals.
ii)	Typing	Natural reference
iii)	Testosterone	Female hormones
iv)	Lymphocyte	Granulocyte
v)	Stapes	Parts of eye

e. i. **Mechanoreceptors:** Are receptors for touch, pressure, on skin due to mechanical change.

ii. **Micturition:** The process of expulsion of urine from the urinary bladder through the urethra to outside due to contraction of urinary bladder and relaxation of sphincter muscles.

iii. **Identical twins:** Produced when one fertilized egg splits into two as it travels down the oviduct.

iv. **Oogenesis:** Oogenesis is the process of production of mature ovum by the ovary.

v. **Neo – Darwinism:** Modern genetics has revealed the source of variations, and Darwin's original theory of natural selection was modified. This new theory is termed as Neo-Darwinism.

f. i. Auditory canal, Ear ossicles, Cochlea, Basilar membrane, Organ of corti (Hearing)

ii. Zygote, Morula, Blastocyst, Embryo, Foetus (Development stages of infants in uterus)

iii. Bowman's capsule, Proximal convoluted tubule, Loop of Henle, Distal convoluted tubule, Renal pelvis (Movement of fluid in a nephron)

iv. Upper epidermis, Palisade tissue, Spongy cells, Substomatal space, Stoma (arrangement of cells in leaf)

v. Ramapithecus,Australopithecus, Homo erectus, Cro-Magnon.

g. i. Cerebrum. ii. Pisum sativum.

iii. Granna. iv. Vitreous humour.

v. Placenta.

h. i. Ans: 3. Menstruation ii. Ans: A. 4.5 cm

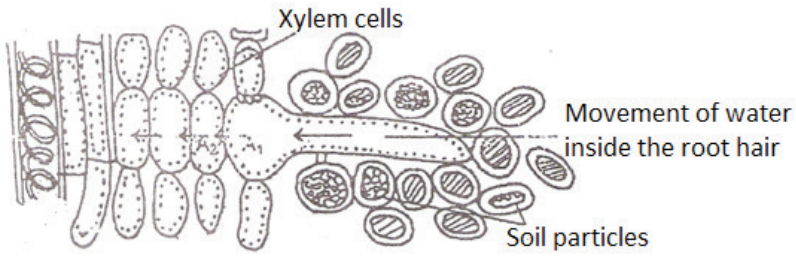
iii. Ans: 3. Pp x Pp iv. Ans: 2. Imbibition pressure

v. Ans: 4. They are not genetically identical and they become gametes.

Section II (60)

Write each question on a new page

2. a. i.



ii.

1. The aim of the experiment is to show that thexylem tissues are responsible for movement of waterin the plant.
2. In plant A phloem is removed.

   In plant B xylem is removed.
3. The leaves of plant A are turgid and have not wilted because there is active movement of water.

   The leaves of plant B are flaccid and wilts because there is no net movement of water.

b. i.

1. Aim of the experiment is to demonstrate thedifference in magnitude of transpiration fromthe two surfaces of a dicot leaf.

2. After sometime the piece of cobalt chloride paperfacing the lower surface turns blue to pink andthe one on the upper side remains blue.
3. Transpiration is the loss of water in the form of water vapour from the aerial parts of the plant.

ii. The general measures to control pollution are:

1. Implement the use of 3Rs – REDUCE, RECYCLE and REUSE.
2. Strict legislation and law should be put in force.
3. Awareness among the citizens should be created at a huge extent.

3. a. i.

1. a. Geotropism b. Thigmotropism
   c. Chemotropism d. Tropic movement
2. They are chemical factors responsible for growth in plant body.

ii.

1. a. Ramapithecus b. Australopithecus
   c. Homo habilis d. Homo erectus
   e. Neanderthal man
2. a. Wisdom teeth. b. Vermiform appendix.
   c. Pinna.

b. i. A – Artery B – Vein

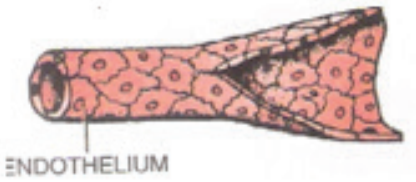
ii. 1 – Middle thick muscular tissue; 2 – Outer connective tissue
3 – Endothelium

iii. A – Artery carries oxygenated blood to all parts of the body exceptthe pulmonary artery.
B – Veins carries deoxygenated blood from all parts of the body to the heart except the pulmonary vein.

iv.

Artery (A)	Vein (B)
Artery has a smaller lumen.	Vein has a wider lumen.
Have a thick muscular middle layer.	Have a thin muscular middle layer.

v. The third category of vessel is <u>Capillary.</u>



4. a.

i. 1 – left kidney, 2 – left ureter,3 – urinary bladder.

ii. Kidney – 1) Excretion and 2) osmoregulation.

Left Ureter – Carries urine from Leftkidney to urinary bladder.Urinary Bladder – Temporarily stores urine.

iii. Urethra – should be at the base of urinary bladder.

iv. Adrenal gland, situated like a cap on both the kidneys. It secretes Adrenaline – Which helps the body to adjust to emergency condition.

b. i.

1. Cerebrum: It controls all the voluntary activities, seat of intelligence, consciousness, will power and helps to think, memorize, invent.
2. Corpus callosum: It transmits impulses from one cerebral hemisphere to the other cerebral hemisphere.

ii. The brain is protected by 3 membranous coverings called Meninges:

Dura matter; Arachnoid; Pia matter. The space between the covering membranes is filled with a watery fluid called cerebrospinal fluid.

iii. Occipital lobe.

Function: It is associated with sensory perception from eyes.

iv. It is an aggregates of nerve cell bodies or cytons.

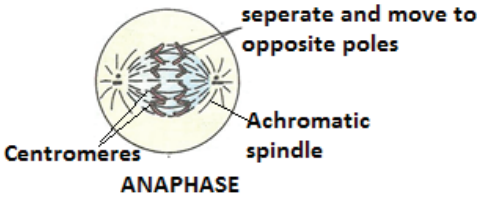
5. a.

i. A – G_1 Phase, B – S Phase, C – G_2 Phase.

ii. Mitosis occurs in four main phases:

1. Prophase
2. Metaphase
3. Anaphase
4. Telophase

iii.



iv. 1. a. Growth, Repair and Regeneration.

b. Asexual reproduction (Amoeba, Bacteria).

c. Diploid chromosome number is maintained.

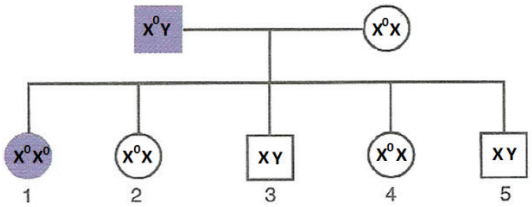
2. Synthesis phase (s) – DNA is synthesized actively.

b. i. Father.

ii. 3 daughters and 2 sons have been born in this family.

iii. The trait is X linked as the daughter has inherited from the father.

iv. Since colour blindness is X linked, mother is normal vision, father is colour blind and one daughter is affected, the Genotype of Mother is XX^o and Father is X^o Y.



v. X

vi. Haemophilia.

6. a.

i. In set up B, only the indigo blue outside the test tube in the beaker, would turn blue due to the oxygen present in the air outside.

ii. Photosynthesis.

iii. Carbon dioxide gas.

iv. Photosynthesis is the process taking place in the green parts of the plant that results in production of food in the form of carbohydrates. The plants live on this food and oxidizes it to produces energy which is necessary for its various metabolic activities.

v. Aquatic plants are valuable in aquariums as they release O_2 by the process of photosynthesis, as a bye product. This O_2 is used by the aquatic animals for respiration. If this oxygen is absent, the aquatic animals will eventually die.

b.

i. 1 – Cochlea
2 – Sensory nerves
3 – Semi-circular canal
4 – Ear ossicles
5 – Eustachian tube
6 – Pinna
7 – Ear drum
8 – Oval window
9 – Auditory nerve
10 – Utriculus and sacculus

ii. 1. Semi-circular canal
2. Utriculus and sacculus

iii. Semi-circular canal and vestibule.

iv. Hammer, anvil and stirrup.

7. a.

i. 1. 1 – Larynx; 3 – Trachea; 4 – Parathyroid gland

2. Iodine

3. It is a condition that affects adults due tohypo secretion of thyroxin.The person becomes sluggish with swelling of face and hands.

ii. 1. Addison's disease
2. Diabetes mellitus
3. Diabetes insipidus
4. Simple goitre
5. Dwarfism

b.

i. 1. Testis

2. 1 – Vas deferens
   2 – Epididymis
   3 – Efferent ducts
   4 – Seminiferous tubule
3. Scrotal sac.
4. Spermatogenesis
5. Seminiferous tubule.
6. Head – Acrosome, nucleus, Middle piece – contains mitochondria.
   Axial filament, Tail.

ii. <u>Disadvantages of large families</u>:

More mouths to feed so every child of the family faces:

1. Lack of basic needs (food, shelter, clothing).
2. Lack of good education.
3. Mother's poor health.

Answers being written by students may have caused spelling errors.