

AIPMT - 2015

Set – E, Biology

Note: Answers have been highlighted in “Yellow” color and Explanations to answers are given at the end

Important Instructions:

1. The Answer Sheet is inside this Test Booklet. When you are directed to open the Test Booklet, take out the Answer Sheet and fill in the particulars on side – 1 and side – 2 carefully with blue/black ball point pen only.
2. The test is of 3 hours duration and Test Booklet contains 180 questions. Each question carries 4 marks. For each correct response, the candidate will get 4 marks. For each incorrect response, one mark will be deducted from the total scores. The maximum marks are 720.
3. Use Blue/Black Ball Point only for writing particulars on this page/marking responses.
4. Rough work is to be done on the space provided for this purpose in the Test Booklet only.
5. On completion of the test, the candidate must handover the Answer Sheet to the invigilator before leaving Room/Hall. The candidates are allowed to take away this Test Booklet with them.
6. The CODE for this Booklet is E. Make sure that the CODE printed on Side – 2 of the Answer Sheet is the same as that on this Booklet. In case of discrepancy, the candidate should immediately report the matter to the Invigilator for replacement of both the Test Booklet and the Answer Sheet.
7. The candidate should ensure that the Answer Sheet is not folded. Do not make any stray marks on the Answer Sheet. DO write your roll no. anywhere else except in the specified space in the Test Booklet/ Answer Sheet.
8. Use of white fluid for correction NOT permissible on the Answer Sheet.
9. Each candidate must shown on demand his/her Admission Card to the Invigilator.
10. No candidate, without special permission of the Superintendent or Invigilator, would leave his/her seat.
11. The candidates should not leave the Examination Hall without handing over their Answer Sheet to the Invigilator on duty and sign the Attendance Sheet twice. Cases where a candidate has not sign the Attendance Sheet second time will be deemed not be have handed over Answer Sheet and dealt with as an unfair means case.
12. Use of Electronic/Manual Calculator is prohibited.
13. The candidates are governed by all Rules and Regulations of the Board with regard to their conduct in the Examination Hall. All cases or unfair means will be dealt with as per Rules and Regulations of the Board.

14. No part of the Test Booklet and Answer Sheet shall be detached under any circumstances.
15. The candidates will write the Correct Test Booklet Code is given in the Test Booklet/Answer Sheet in the Attendance Sheet.

Note: Answers have been highlighted in "Yellow" color and Explanations to answers are given at the end

Q.91 Which one of the following matches is correct?

(1)	Phytophthora	Aseptate mycelium	Basidiomycetes
(2)	Alternaria	Sexual reproduction absent	Deuteromycetes
(3)	Mucor	Reproduction by Conjugation	Ascomycetes
(4)	Agaricus	Parasitic fungus	Basidiomycetes

Q.92 Read the following five statements (A to E) and select the option with all correct statements:

- (A) Mosses and Lichens are the first organisms to colonise a bare rock.
- (B) seleginella is a homosporous pteridophyte.
- (C) Coralloid roots in Cycas have VAM.
- (D) Main plant body in bryophytes is gametophytic, whereas in pteridophytes it is sporophytic.
- (E) In gymnosperms, male and female gametophytes are present within sporangia located on sporophyte.

- (1) (A), (C) and (D)
- (2) (B), (C) and (D)
- (3) (A), (D) and (E)
- (4) (B), (C) and (E)

Q.93 In which of the following gametophyte is not independent free living?

- (1) Funaria
- (2) Marchantia
- (3) Pteris
- (4) Pinus

Q.94 Which one of the following statements is wrong?

- (1) Algin and carrageen are products of algae
- (2) Agar-agar is obtained from Gelidium and Gracilaria
- (3) Chlorella and Spirulina are used as space food

(4) Mannitol is stored food in Rhodophyceae

Q.95 The guts of cow and buffalo possess:

(1) Fucus spp.

(2) Chlorella spp.

(3) Methanogens

(4) Cyanobacteria

Q.96 Male gametes are flagellated in:

(1) Polysiphonia

(2) Anabaena

(3) Ectocarpus

(4) Spirogyra

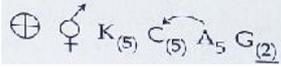
Q.97 Vascular bundles in monocotyledons are considered closed because:

(1) A bundle sheath surrounds each bundle

(2) Cambium is absent

(3) There are no vessels with perforations

(4) Xylem is surrounded all around by phloem

Q.98  is the flora formula of:

(1) Allium

(2) Sesbania

(3) Petunia

(4) Brassica

Q.99 A major characteristic of the monocot root is the presence of:

(1) Open vascular bundles

(2) Scattered vascular bundles

(3) Vasculature without cambium

(4) Cambium sandwiched between phloem and xylem along the radius

Q.100 Keel is the characteristic feature of flower of:

- (1) Tulip
- (2) Indigofera
- (3) Aloe
- (4) Tomato

Q.101 Perigynous flowers are found in:

- (1) Guava
- (2) Cucumber
- (3) China rose
- (4) Rose

Q.102 Leaves become modified into spines in:

- (1) Opuntia
- (2) Pea
- (3) Onion
- (4) Silk Cotton

Q.103 The structures that are formed by stacking of organized flattened membranous sacs in the chloroplasts are:

- (1) Cristae
- (2) Grana
- (3) Stroma lamellae
- (4) Stroma

Q.104 The chromosomes in which centromere is situated close to one end are:

- (1) Metacentric
- (2) Acrocentric
- (3) Telocentric
- (4) Sub-metacentric

Q.105 Select the correct matching in the following pairs:

- (1) Smooth ER – Oxidation of phospholipids
- (2) Smooth ER – Synthesis of lipids

- (3) Rough ER – Synthesis of glycogen
- (4) Rough ER – Oxydation of fatty acids

Q.106 True nucleus is absent in:

- (1) **Anabaena**
- (2) Mucor
- (3) Vaucheria
- (4) Vovox

Q.107 Which one of the following is not an inclusion body found in prokaryotes?

- (1) Phosphate granule
- (2) Cyanophycean granule
- (3) Glycogen granule
- (4) **Polysome**

Q.108 Transpiration and root pressure cause water to rise in plants by:

- (1) pulling it upward
- (2) **pulling and pushing it, respectively**
- (3) pushing it upward
- (4) pushing and pulling it, respectively

Q.109 Minerals known to be required in large amounts for plant growth include:

- (1) **phosphorus, potassium , sulphur, calcium**
- (2) calcium, magnesium, manganese, copper
- (3) potassium, phosphorus, selenium, boron
- (4) magnesium, sulphur, iron, zinc

Q.110 What causes a green plant exposed to the light on only one side, to bend toward the source of light as it grows?

- (1) Green plants need light to perform photosynthesis.
- (2) Green plans seek light because they are phototropic.
- (3) Light stimulates plant cells on the lighted side to grow faster.
- (4) **Auxin accumulates on the shaded side, stimulating greater cell elongation there.**

Q.111 In a ring girdled plant:

- (1) The shoot dies first
- (2) **The root dies first**
- (3) The shoot and root die together
- (4) Neither root nor shoot will die

Q.112 Typical growth curve in plants is:

- (1) **Sigmoid**
- (2) Linear
- (3) Stair-steps shaped
- (4) Parabolic

Q.113 Which one gives the most valid and recent explanation for stomatal movements?

- (1) Transpiration
- (2) **Potassium influx and efflux**
- (3) Starch hydrolysis
- (4) Guard cell photosynthesis

Q.114 The hilum is a scar on the:

- (1) **Seed, where funicle was attached**
- (2) Fruit, where it was attached to pedicel
- (3) Fruit, where style was present
- (4) Seed, where micropyle was present

Q.115 Which one of the following may require pollinators, but is genetically similar to autogamy?

- (1) **Geitonogamy**
- (2) Xenogamy
- (3) Apogamy
- (4) Cleistogamy

Q.116 Which one of the following statements is not true?

- (1) Pollen grains are rich in nutrients, and they are used in the forms of tablets and syrups
- (2) Pollen grains of some plants cause severe allergies and bronchial afflictions in some people

(3) The flowers pollinated by flies and bats secrete foul odour to attract them

(4) Honey is made by bees by digesting pollen collected from flowers

Q.117 Transmission tissue is characteristic feature of:

(1) Hollow style

(2) Solid style

(3) Dry stigma

(4) Wet stigma

Q.118 In ginger vegetative propagation occurs through:

(1) Rhizome

(2) Offsets

(3) Bulbils

(4) Runners

Q.119 Which of the following are the important floral rewards to the animal pollinators?

(1) Colour and large size of flower

(2) Nectar and pollen grains

(3) Floral fragrance and calcium crystals

(4) Protein pellicle and stigmatic exudates

Q.120 How many pairs of contrasting characters in pea plants were studied by Mendel in his experiments?

(1) Five

(2) Six

(3) Eight

(4) Seven

Q.121 Which is the most common mechanism of genetic variation in the population of a sexually-reproducing organism?

(1) Transduction

(2) Chromosomal aberrations

(3) Genetic drift

(4) **Recombination**

Q.122 A technique of micropropagation is:

(1) Somatic hybridization

(2) **Somatic embryogenesis**

(3) Protoplast fusion

(4) Embryo rescue

Q.123 The movement of a gene from one linkage group to another is called:

(1) Inversion

(2) Duplication

(3) **Translocation**

(4) Crossing over

Q.124 Multiple alleles are present:

(1) On different chromosomes

(2) At different loci on the same chromosome

(3) **At the same locus of the chromosome**

(4) On non-sister chromatids

Q.125 Which body of the Government of India regulates GM research and safety of introducing GM organisms for public services?

(1) Bio – safety committee

(2) Indian Council of Agricultural Research

(3) **Genetic Engineering Approval Committee**

(4) Research Committee on Genetic Manipulation

Q.126 In Bt cotton, the Bt toxin present in plant tissue as pro – toxin is converted into active toxin due to:

(1) **alkaline pH of the insect gut**

(2) acidic pH of the insect gut

(3) action of gut micro – organisms

(4) presence of conversion factors in insect gut

Q.127 The crops engineered for glyphosate are resistant/tolerant to:

- (1) Fungi
- (2) Bacteria
- (3) Insects
- (4) **Herbicides**

Q.128 DNA is not present in:

- (1) Chloroplast
- (2) **Ribosomes**
- (3) Nucleus
- (4) Mitochondria

Q.129 Which of the following enhances or induces fusion of protoplasts?

- (1) Sodium chloride and potassium chloride
- (2) **Polyethylene glycol and sodium nitrate**
- (3) IAA and kinetin
- (4) IAA and gibberellins

Q.130 The UN Conference of Parties on climate change in the year 2011 was held in:

- (1) Poland
- (2) **South Africa**
- (3) Peru
- (4) Qatar

Q.131 Vertical distribution of different species occupying different levels in a biotic community is known as:

- (1) Divergence
- (2) **Stratification**
- (3) Zonation
- (4) Pyramid

Q.132 In which of the following both pairs have **correct** combination?

- (1) **In situ conservation : National Park**

Ex situ conservation : Botanical Garden

- (2) In situ conservation : Cryopreservation
Ex situ conservation : Wildlife Sanctuary
- (3) In situ conservation : Seed Bank
Ex situ conservation : National park
- (4) In situ conservation : Tissue culture
Ex situ conservation : Sacred groves

Q.133 Secondary Succession takes places on/in:

- (1) Bare rock
- (2) **Degraded forest**
- (3) Newly created pond
- (4) Newly cooled lava

Q.134 The mass of living material at a trophic level at a particular time is called:

- (1) Gross primary productivity
- (2) Standing state
- (3) Net primary productivity
- (4) **Standing crop**

Q.135 In an ecosystem the rate of production of organic matter during photosynthesis is termed as:

- (1) Net primary productivity
- (2) **Gross primary productivity**
- (3) Secondary productivity
- (4) Net productivity

Q.136 Which of the following characteristics is mainly responsible for diversification of insects on land ?

- (1) Segmentation
- (2) Bilateral symmetry
- (3) **Exoskeleton**
- (4) Eyes

Q.137 Which of the following endroparasities of humans does show viviparity ?

- (1) *Ancylostoma duodenale*
- (2) *Enterobius vermicularis*
- (3) ***Tichinella spiralis***
- (4) *Ascaris lumbricoides*

Q.138 Which of the following represents the correct combination without any exception ?

	Charactersitcs	Class
(1)	Mammary gland ; hair on body; pinnae; two pairs of limbs	Mammalia
(2)	Mouth ventral; gills without Operculum; skin with placoid Scales; persistent notochord	Chondrichthyes
(3)	Sucking and circular mouth ; jaws absent, integument without scales; paired appengages	Cyclostomata
(4)	Body covered with feathers; skin moist and glandular; force-limbs form wings; lungs with aire sacs	Aves

Q.139 Which of the following animals is not viviparous ?

- (1) Flying fox (Bat)
- (2) Elephant
- (3) **Platypus**
- (4) Whale

Q.140 Erythropoiesis starts in:

- (1) Kidney
- (2) Liver
- (3) Spleen
- (4) **Red bone marrow**

Q.141 The terga, sterna and pleura of cockroach body are joined by:

- (1) Cementing glue
- (2) Muscular tissue
- (3) **Arthrodiial membrane**

(4) Cartilage

Q.142 Nuclear envelope is derivative of :

- (1) Smooth endoplasmic reticulum
- (2) Membrane of Golgi complex
- (3) Microtubules
- (4) Rough endoplasmic reticulum

Q.143 Cytochromes are found in :

- (1) Matrix of mitochondria
- (2) Outer wall of mitochondria
- (3) Cristae of mitochondria
- (4) Lysosomes

Q.144 Which one of the following statements is incorrect ?

- (1) A competitive inhibitor reacts reversibly with the enzyme to form an enzyme-inhibitor complex.
- (2) In competitive inhibition , the inhibitor molecule is not chemically changed by the enzyme.
- (3) The competitive inhibitor does not affect the rate of breakdown of the enzyme-substrate complex.
- (4) The presence of the competitive inhibitor decreases the K_m of the enzyme for the substrate.

Q.145 Select the correct option;

	I		II
(a)	Synapsis aligns homologous chromosomes	(i)	Anaphase-II
(b)	Synthesis of RNA and protein	(ii)	Zygotene
(c)	Action of enzyme recombinase	(iii)	G ₂ -phase
(d)	Centromeres do not separate but chromatids move towards opposite poles	(iv)	Anaphase-I
		(v)	Pachytene

- (a) (b) (c) (d)

- (1) (ii) (i) (iii) (iv)
- (2) (ii) (iii) (v) (iv)
- (3) (i) (ii) (v) (iv)
- (4) (ii) (iii) (iv) (v)

Q.146 A somatic cell that has just completed the S phase of its cell cycle, as compared to gamete of the same species, has:

- (1) twice the number of chromosomes and twice the amount of DNA
- (2) same number of chromosomes but twice the amount of DNA
- (3) twice the number of chromosomes and four times the amount of DNA
- (4) Four times the number of chromosomes and twice the amount of DNA.

Q.147 Which of the following statements is not correct?

- (1) Brunner's glands are present in the submucosa of stomach and secrete pepsinogen
- (2) Goblet cells are present in the mucosa of intestine and secrete mucus.
- (3) Oxyntic cells are present in the mucosa of stomach and secrete HCl.
- (4) Acini are present in the pancreas and secrete carboxypeptidase

Q148. Gastric juice of infants contains :

- (1) maltase, pepsinogen, rennin
- (2) nuclease, pepsinogen, lipase
- (3) pepsinogen, lipase, rennin
- (4) amylase, rennin, pepsinogen

Q.149 When you hold your breath, which of the following gas changes in blood would first lead to the urge to breathe ?

- (1) falling O₂ concentration
- (2) rising CO₂ concentration
- (3) falling CO₂ concentration
- (4) rising CO₂ and falling O₂ concentration

Q.150 Blood pressure in the mammalian aorta is maximum during :

- (1) Systole of the left atrium

- (2) Diastole of the right ventricle
- (3) Systole of the left ventricle
- (4) Diastole of the right atrium

Q.151 Which one of the following is correct ?

- (1) Plasma = Blood – Lymphocytes
- (2) Serum = Blood + Fibrinogen
- (3) Lymph = Plasma + RBC + WBC
- (4) Blood = Plasma + RBC + WBC + Platelets

Q.152 Removal of proximal convoluted tubule from the nephron will result in :

- (1) More diluted urine
- (2) More concentrated urine
- (3) No change in quality and quantity of urine
- (4) No urine formation

Q.153 Sliding filament theory can be best explained as :

- (1) When myofilaments slide pass each other Actin filaments shorten while Myosin filament do not shorten
- (2) Actin and Myosin filaments shorten and slide pass each other
- (3) Actin and Myosin filaments do not shorten but rather slide pass each other
- (4) When myofilaments slide pass each other, Myosin filaments shorten while Actin filaments do not shorten

Q.154 Glenoid cavity articulates :

- (1) clavicle with acromion
- (2) scapula with acromion
- (3) clavicle with scapula
- (4) humerus with scapula

Q.155 Which of the following regions of the brain is incorrectly paired with its function ?

- (1) Medulla oblongata – homeostatic control
- (2) Cerebellum – language comprehension

- (3) Corpus callosum – communication between the left and right cerebral cortices
- (4) Cerebrum – calculation and contemplation

Q.156 A gymnast is able to balance his body upside down even in the total darkness because of :

- (1) Cochlea
- (2) Vestibular apparatus
- (3) Tectorial membrane
- (4) Organ of corti

Q.157 A chemical signal that has both endocrine and neural roles is :

- (1) Melatonin
- (2) Calcitonin
- (3) Epinephrine
- (4) Cortisol

Q.158 Which of the following does not favour the formation of large quantities of dilute urine ?

- (1) Alcohol
- (2) Caffeine
- (3) Renin
- (4) Atrial-natriuretic factor

Q.159 Capacitation refers to changes in the :

- (1) sperm before fertilization
- (2) ovum before fertilization
- (3) ovum after fertilization
- (4) sperm after fertilization

Q.160 Which of these is not an important component of initiation of parturition in humans ?

- (1) Increase in estrogen and progesterone ratio
- (2) Synthesis of prostaglandins
- (3) Release of oxytocin
- (4) Release of prolactin

Q.161 Which of the following viruses is not transferred through semen of an infected male ?

- (1) Hepatitis B virus
- (2) Human immunodeficiency virus
- (3) Chikungunya virus
- (4) Ebola virus

Q.162 Which of the following cells during gametogenesis is normally diploid ?

- (1) Primary polar body
- (2) Spermatid
- (3) Spermatogonia
- (4) Secondary polar body

Q.163 Hysterectomy is surgical removal of :

- (1) Uterus
- (2) Prostate gland
- (3) Vas-deference
- (4) Mammary glands

Q.164 Which of the following is not a sexually transmitted disease ?

- (1) Syphilis
- (2) Acquired Immuno Deficiency Syndrome (AIDS)
- (3) Trichomoniasis
- (4) Encephalitis

Q.165 An abnormal human baby with 'XXX' sex chromosomes was born due to :

- (1) formation of abnormal sperms in the father
- (2) formation of abnormal ova in the mother
- (3) fusion of two ova and one sperm
- (4) fusion of two sperms and one ovum

Q.166 Alleles are :

- (1) different phenotype

- (2) true breeding homozygotes
- (3) different molecular forms of a gene
- (4) heterozygotes

Q.167 A man with blood group 'A' marries a woman with blood group 'B'. What are all the possible blood groups of their offsprings ?

- (1) A and B only
- (2) A, B and AB only
- (3) A, B, AB and O
- (4) O only

Q.168 Gene regulation governing lactose operon of E.coli that involves the lac I gene Product is :

- (1) Positive and inducible because it can be induced by lactose
- (2) negative and inducible because repressor protein prevents transcription.
- (3) negative and repressible because repressor protein prevents transcription
- (4) Feedback inhibition because excess of β -galactosidase can switch off transcription

Q.169 In sea urchin DNA, which is double stranded, 17% of the bases were shown to be cytosine. The percentage of the other three bases expected to be present in this DNA are :

- (1) G34%, A 24.5%, T 24.5%
- (2) G 17%, A16.5%, T 32.5%
- (3) G 17%, A33%, T33%
- (4) G8.5%, A50%, T24.5%

Q.170 Which of the following had the smallest brain capacity ?

- (1) *Homo erectus*
- (2) *Homo sapiens*
- (3) *Homo neanderthalensis*
- (4) *Homo habilis*

Q.171 A population will not exist in Hardy-Weinberg equilibrium if :

- (1) individuals mate selectively
- (2) there are no mutations

(3) there is no migration

(4) the population is large

Q.172 Match each disease with its correct type of vaccine :

- | | |
|--------------------|------------------------|
| (a) tuberculosis | (i) harmless virus |
| (b) Whooping cough | (ii) inactivated toxin |
| (c) diphtheria | (iii) killed bacteria |
| (d) polio | (iv) harmless bacteria |

- | | (a) | (b) | (c) | (d) |
|-----|-------|-------|-------|-------|
| (1) | (ii) | (i) | (iii) | (iv) |
| (2) | (iii) | (ii) | (iv) | (i) |
| (3) | (iv) | (iii) | (ii) | (i) |
| (4) | (i) | (ii) | (iv) | (iii) |

Q.173 HIV that causes AIDS, first starts destroying :

- (1) B –Lymphocytes
- (2) Leucocytes
- (3) Helper T – Lymphocytes
- (4) Thrombocytes

Q.174 The active form of *Entamoeba histolytica* feeds upon :

- (1) erythrocytes; mucosa and submucosa of colon
- (2) mucosa and submucosa of colon only
- (3) food in intestine
- (4) blood only

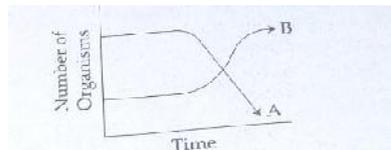
Q.175 High value of BOD (Biochemical Oxygen Demand) indicates that :

- (1) water is pure
- (2) water is highly polluted
- (3) water is less polluted
- (4) consumption of organic matter in the water is higher by the microbes

Q.176 Most animals are tree dwellers in a :

- (1) coniferous forest
- (2) thorn woodland
- (3) temperate deciduous forest
- (4) tropical rain forest

Q.177 The following graph depicts changes in two populations (A and B) of herbivores in a grassy field. A possible reason for these changes is that :



- (1) Both plant populations in this habitat decreased
- (2) Population B competed more successfully for food than population A
- (3) Population A produced more offspring than population B
- (4) Population A consumed the members of population B

Q.178 Cry preservation of gametes of threatened species in viable and fertile condition can be referred to as:

- (1) In situ conservation of biodiversity
- (2) Advanced ex-situ conservation of biodiversity
- (3) In situ conservation by sacred groves
- (4) In situ cryo-conservation of biodiversity

Q.179 Rachel Carson's famous book "Silent Spring" is related to :

- (1) Pesticide pollution
- (2) Noise pollution
- (3) Population explosion
- (4) Ecosystem management

Q.180 Which of the following is not one of the prime health risks associated with greater UV radiation through the atmosphere due to depletion of stratosphere ozone ?

- (1) Increased skin cancer

- (2) Reduced Immune System
- (3) Damage to eyes
- (4) Increased liver cancer

Answer Key and Explanations

Sol.91 (2)

Alternaria.

Phytophthora is phycomycetes, mucor a phycomycetes as well. Whereas, Agaricus is Basidiomycetes but not a parasitic fungus.

Sol.92 (3)

(A), (D) and (E)

Statements (B) & (C) are incorrect

(B) → Selaginella is a heterosporous pterido-phyte.

(C) → Coralloid roots contain symbiotic N_2 -fixing cyanobacteria with roots of some gymnosperms whereas VAM is a type of mycorrhiza which contain fungus penetrating the cortical cells of the roots of a vascular plant.

Sol.93 (4)

Pinus

Sol.94 (4) Mannitol is stored food in rhodophyceae.

Floridean starch is stored food in rhodophyceae & mannitol is stored food in pheophyceae.

Sol.95 (3) Methanogens –these are methane producing bacteria.

Sol.96 (3)

Ectocarpus – In Ectocarpus, the gametes are pyriform (pear- shaped) with two laterally attached flagella.

Sol.97 (2)

Cambium is absent.

In monocot stem, vascular bundle contains xylem towards the inner side & phloem towards the outside. In between there is no cambium.

Sol.98 (3)

Petunia

Sol.99 (3)

In monocot stem, vascular bundle contains xylem towards the inner side & phloem towards the outer side. In between there is no cambium.

Sol.100 (2)

Indigofera is the genus of subfamily faboideae of the flowering plant family fabaceae in which presence of keel is a characteristic feature.

Sol.101 (4)

Rose

Sol.102 (1)

Opuntia –leaves in opuntia become modified spines to reduce the loss of water.

Sol.103 (2)

Grana

Stroma is the transparent, proteinacious & watery substance while grana include stacks of thylakoids which are flattened membranous sacs.

Sol.104 (2)

Acrocentric

(i) The metacentric chromosome has middle centromere forming two equal arms of the chromosome.

(ii) The sub-metacentric chromosome has centromere nearer to one end of the chromosome resulting into one shorter arm and one longer arm.

(iii) The telocentric chromosome has a terminal centromere.

Sol.105 (2)

Smooth ER – synthesis of lipids.

Sol.106 (1)

Anabaena is a cyanobacteria (prokaryotes) in which true nucleus is absent.

Sol.107 (4)

Polysome – It is a structure in which a lot of ribosomes translating an mRNA chain simultaneously

Sol.108 (2)

Sol.109 (1)

These are all Macro nutrients required by plants

Sol.110 (4)

Sol.111 (2)

The root dies first. In girdling phloem of the tree is removed due to which leaves fail to transport sugars to roots.

Sol.112 (1)

Plants grow in size geometrically

Sol.113 (2)

fact

Sol.114 (1)

fact

Sol.115 (1)

When pollination takes place in between the two flowers of the same plant then it is called geitonogamy. From the genetical point of view geitonogamy is self pollination because all flowers of the same plant are genetically identical. But ecologically, it is considered as cross pollination.

Sol.116 (3)

Sol.117 (3)

Sol.118 (1)

Sol.119 (2)

Pollination give an advantage to the animal pollinator by providing them with nectar, and benefits the plant by making a direct transfer of pollen from one plant to the pistil of other plant.

Sol.120 (4)

1 Flower color is purple or white.

2 Flower position is axial or terminal.

3 Stem lengths is long or short.

4 Pod shape is inflated or constricted

5 Pod color is yellow or green

6 Seed shape is round or wrinkled

7 seed color is yellow or green.

Sol.121 (4)

Sol.122 (2)

In micropropagation, stock plant material is used to produce a number of progeny & somatic embryogenesis is a type of propagation in which single somatic cell is cultured for embryo production.

Sol.123 (3)

Sol.124 (3)

Multiple alleles involve alternative forms of an allele which are present at same locus.

Sol.125 (3)

Sol.126 (1)

Due to high PH of insect gut, pro-toxin is converted into toxin form.

Sol.127 (4)

Glyphosate is a type of herbicide. Farmers are adopting Glyphosate resistant crop in which only weeds are killed & not the crop by the herbicide.

Sol.128 (2)

DNA is present in Chloroplast, mitochondria & nucleus & it is not present in Ribosomes.

Sol.129 (2)

PEG induces protoplast aggregation and hence fusion. NaNO_3 is also used to enhance fusion.

Sol.130 (2)

It was held in Durban which is in South Africa.

Sol.131 (2)

Stratification

Sol.132 (1)

National Park is included in In-situ conservation.

Botanical garden is included in Ex-situ conservation.

Sol.133 (2)

Secondary succession is a sequence of community changes which take place on a degraded habitat.

Sol.134 (4)

Standing crop is the total amount of living material at a trophic level at a particular time.

Sol.135 (2)

Gross Primary Productivity (G.P.P) also known as total photosynthesis.

Sol.136 (3)

Sol.137 (3)

Ancylostoma duodenale, *Enterobius vermicularis* & *Ascaris lumbricoidis* are oviparous. While *Trichinella spiralis* is ovo –viviparous where eggs are hatched in Uterus.

Sol.138 (1)

Sol.139 (3)

The Platypus and the Echidna are the only mammals that are Oviparous. It lays egg and then they hatch.

Sol.140 (4)

Erythropoiesis begins in the bone marrow.

Sol.141 (3)

Sol.142 (1)

Sol.143 (3)

Sol.144 (3)

Sol.145 (2)

Sol.146 (3)

Sol.147 (1)

Sol.148 (3)

Sol.149 (2)

Sol.150 (3)

Sol.151 (4)

Sol.152 (1)

Sol.153 (3)

Sol.154 (4)

Sol.155 (1)

Sol.156 (2)

Sol.157 (3)

Sol.158 (4)

Sol.159 (1)

Sol.160 (1)

Sol.161 (3)

Sol.162 (3)

Sol.163 (1)

Sol.164 (4)

Sol.165 (2)

Sol.166 (3)

Sol.167 (3)

Sol.168 (2)

Sol.169 (3)

As we know content of C = G content

As C = 17%

And among 100% content

A + T content = 100 – (C + G)

= 100 – (17 + 17)

= 100 – 36

= 66%

Now, A content = T Content

∴ A content = $\frac{66}{2} = 33\%$ & T content also = 33%

Sol.170 (4)

Sol.171 (1)

Sol.172 (3)

Sol.173 (2)

Sol.174 (2)

Sol.175 (4)

Sol.176 (4)

Sol.177 (2)

Sol.178 (2)

Sol.179 (1)

Sol.180 (4)