

151-

In autoimmune disorders body's immune system attacks its own cells.

Rheumatoid arthritis is an example of immune system in which immune system becomes active against synovial membrane.

Correct option - 2

152-

The coagulum or blood clot is formed of threads called Fibrin (not Thrombin).

Therefore, Statement I is incorrect.

• After completion of their life span (120 days), RBCs undergo breakdown in spleen. Therefore, spleen is regarded as graveyard of RBCs.

Therefore, Statement II is ~~incorrect~~ correct.

153 - Asexual reproductive structure of penicillium is Conidia.

154 - After formation, sperms head detach from Sertoli cells and enter into lumen of seminiferous tubule. This is known as Spermiation.

So, statement I is correct.

Spermiogenesis is the process of formation of sperms from spermatids, not from spermatogonia.

So, Statement II is incorrect.

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155 → Under normal physiological condition every 100ml of oxygenated blood can deliver 5ml of O_2 to the tissue.

Every 100ml of oxygenated blood carry 20ml O_2 out of this only 25% is utilised i.e. 5ml.

156 -

157 → When more individuals acquire specific character value other than mean character value then it is an example of directional selection.

158 - Breeding crops with higher level of vitamins or minerals or higher protein or healthier fat is called biofortification.

159 - Between adjacent vertebrae (bone) of vertebral column a pad of cartilage called intervertebral disc is present.

• They act as shock-absorber.

So, correct answer will be 1 (cartilage).

160 - Uric acid is a type of nitrogenous waste which is insoluble in water and is excreted as pellets or paste.

• Uric acid is the nitrogenous waste of birds, insects, lizards etc.

So, the correct answer is - Pavo (a bird) - 3

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161- In prokaryotes endoplasmic reticulum is absent
 so the correct option will be 2.

162- Correct option is-2 (b, d, e)

This question is asking the processes which occur in spermatogenesis but not in oogenesis.

a- In both types of gametogenesis haploid gametes are formed.

b- Differentiation of gamete occurs after completion of meiosis: it occurs in case of spermatogenesis but not in oogenesis.

[Spermatid $\longrightarrow$ Sperm]

c- Meiosis occurs continuously during spermatogenesis not during oogenesis.

In oogenesis meiosis occurs after a time gap.
 d- Both are controlled by hormones of ant. pituitary.

163- In adult vertebrates notochord is replaced by vertebral column [not in all chordates]
 Therefore, All vertebrates are chordates but all chordates are not vertebrates.

Correct option: 4.

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MOMENTUM

4 - In birds digestive tract has additional chambers like crop and gizzard.

- In this question option (3) has examples of birds.

Pavo, Psittacula, Corvus all are birds.

5 - Osteoporosis is characterised by decreased bone mass and increased chances of fracture.

It occurs due to increased osteoclastic activities of the bone.
So, Assertion (A) is correct.

* Common cause of osteoporosis is decreased level of estrogen in post-menopausal women.

So, Reason (R) is not correct.

66 - The patient of ADA deficiency requires periodic infusion of genetically engineered lymphocytes are not immortal cells.

7 -

8 - Kingdom — Phylum — Class — Order — Family — Genus
|
Species

Correct option 4

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169 - Restriction endonucleases recognises specific sequences of six base pairs called palindromic sequences.

So, Statement I is correct.

Restriction endonucleases cut DNA strand little way from the centre of palindromic site and produces staggered or sticky ends.

So, Statement II is also correct.

170 - Size of mycoplasma is less than $0.3 \mu m$
 So, it can cross through less than $1 \mu m$ filter size.

" Mycoplasma are bacteria without cell wall.
 So, Option 2 is correct.

171 -

Adipose tissue, Cartilage and blood are examples of connective tissue.

— Neuroglia is a cell of nervous tissue.
 (Not a connective tissue)

* So, option 3 is correct.

172 - Lippe's loop is a type of non-medicated IUD.
 Option - 2 is correct.

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173- Oogenesis get initiated during embryonic life [intrauterine life].

NOTE: Spermatogenesis started at puberty.

Option (1) is correct.

174- Patients who have undergone organ transplantation require regular intake of immuno suppressive drugs like Cyclosporin A.

Cyclosporin A is obtained from a fungus called *Trichoderma polysporum*.

Option 4 is correct.

175- Fatty acids and glycerol are absorbed as chylomicron and chylomicron is too big to enter in blood vessels therefore these are not absorbed in blood.

So, Statement I is correct.

Lacteals carry chylomicrons into lymphatic vessels and ultimately into blood.

Statement II is also correct.

So, correct option is B.

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176 - Botany

177 - Cockroaches have two pair of wings -

1- Forewings [tegmina] elytra → arise from mesothorax

2- Hindwings → Arise from metathorax.

[Help in flight]

So, correct option is 1

178 - Conducting part of respiratory system performs three functions -

1- Humidification

2- Thermoregulation: temperature of inhaled air is brought to body temperature.

3- Filtration: foreign particles present in air are trapped.

- Surface for diffusion of O_2 and CO_2 is provided by respiratory part of respiratory system.

So, correct option is 3.

79- 1- tetany [rapid, involuntary contraction of muscle], occurs due to low Ca^{2+} level.
 [Not due to high Ca^{2+} level]

2- Myasthenia gravis is an autoimmune disorder resulting in weakening and paralysis of ~~the~~ skeletal muscle]

[Not a genetic disorder]

3- Muscular dystrophy is a genetic disease causing progressive degeneration of skeletal muscle

[Not an autoimmune disorder].

4- Inflammation of joint - Arthritis.

So, option 4 is correct.

180 - Botany.

181 - The process of breakdown of food by detritivores is called fragmentation.

So, correct option is (i)

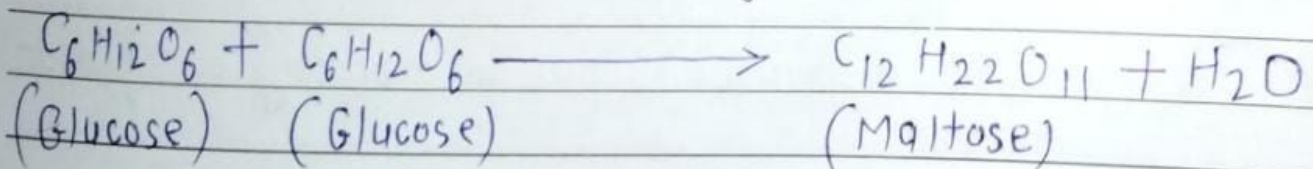
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182 -

- 183 -
- (1) Salivary amylase of saliva causes digestion of complex carbohydrates (Starch) into maltose.
 - (2) Water present in saliva prevents ~~the~~ oral cavity from drying out (lubrication)
 - (3) Saliva does not cause digestion of disaccharides.
 - Digestion of disaccharides is done by the enzymes of intestinal juice.
 - (4) Lysozymes present in saliva ~~are~~ Kill ~~microbes~~ bacteria and control bacterial population in mouth.

So, Correct option is 3.

184 - ~~when the~~ Maltose is formed by dehydration reaction between two glucose molecules.



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105 →

Botany

106 -

Botany

107 -

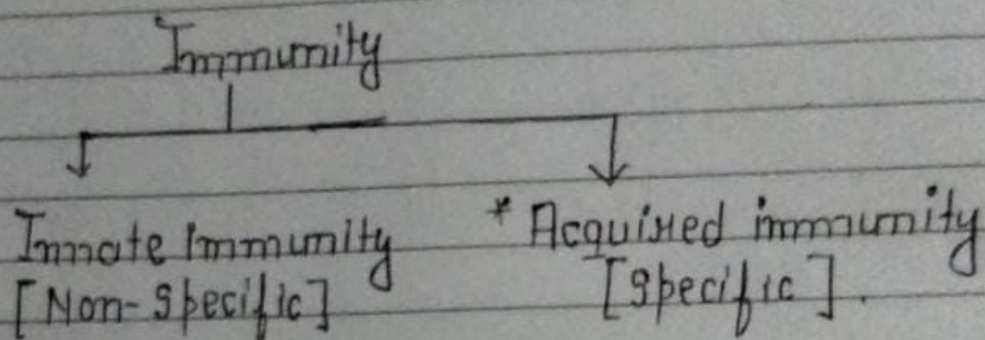
Botany

108 -

Botany

109 →

Immunity is of two types →



Acquired immunity is of two types →

1- Primary response → Produced during first encounter with a pathogen.

2- Secondary response → Also known as anamnestic response.

• It is produced during second encounter with same pathogen.

⇒ Anamnestic response is due to memory of first encounter.

So, all options are correct except option 3.
 Therefore correct option is 3.

90 - Statements a, c, d, e are correct regarding insulin but not in case of genetically engineered insulin.

This question is asking about genetically engineered insulin.

For genetically engineered insulin only statement b is correct.

So, option 1 is correct.

31 - Parathyroid hormone increases Ca^{2+} level in blood.
 [does not decrease Ca^{2+} level].

Effects of parathyroid hormone $\rightarrow$

1 - It stimulates the process of bone resorption
 [by increasing osteoclastic activity].

2 - It increases ~~resorption~~ reabsorption of Ca^{2+} from renal tubule.

3 - Increases absorption of calcium from digested food.

- It does not have any effect on carbohydrate metabolism.

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• (b), (d), (e) are not the effects of parathyroid hormone.

So, option 1 is correct.

192- There are two types of synapses in the body -

1- Chemical Synapses : In this presynaptic and postsynaptic neurons are separated by a space called synaptic cleft.

• Chemical synapses use neurotransmitters for transmission of nerve impulse from presynaptic to post-synaptic neuron.

2- Electrical ~~connect~~ Synapses : In this presynaptic and post-synaptic neurons are in close proximity. Therefore, nerve impulse can flow directly into other across an electrical synapse.

As a result impulse transmission ~~is always~~ across an electrical synapse is always faster than that across chemical synapse.

So, correct option is 3.

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193 -

a - Bronchioles are lined with ciliated epithelium.
 a - iv

b - Goblet cells are found in glandular tissue
 b - iii

c - Tendons are example of dense regular connective tissue
 c - i

d - Adipose tissue is an example of loose connective tissue
 d - ii

So, option 4 is correct.

194 - Botany

195 - Botany

196 - a - Animals store carbohydrate in the form of glycogen in liver.

So, glycogen is a storage product.

a - iv.

b - Globulins are also known as antibody.
 b - iii

c - Steroids (cholesterol) are precursor of sex hormones and hormones of adrenal cortex
 c - i

d - Thrombin act as an enzyme (biocatalyst)

and convert fibrinogen into fibrin
 d-ii

So, option 3 is correct.

197 - Desirable features of cloning vector →

1- Presence of a selectable marker gene.
 Antibiotic resistant genes are used as
 selectable marker.

2- A single restriction enzyme site must be
 present.

3- Presence of two or more recognition site will create
 multiple fragments which will make the process
 complicated.

3- Presence of origin of replication.

So, option 3 is not a desirable feature of a
 cloning vector.

198 - Flippers of penguin and dolphin are a pair
 of analogous organs [not homologous]

Correct Option is 3.

199 -

1 - The tricuspid and bicuspid valves do not open due to simultaneous contraction of atria. Instead they open due to relaxation of ventricle after ventricular contraction.

2 - Blood moves freely from atria to the ventricle during joint diastole.

3 - Increased ventricular pressure causes opening of semilunar valve (not ~~at~~ closing)

4 - The sinoatrial node (SAN) generates action potential to stimulate atrial contraction [Not Atrioventricular (AVN) node.]

So, option 2 is correct.

200 -

a - Diaphragm - Covers the cervix blocking the entry of sperm.

a - iv.

b - Contraceptive pills - inhibit ovulation and implantation.

b - i

c - Intrauterine devices - Increase phagocytosis of sperm

c - ii

d - Lactational amenorrhoea - Absence of menstrual cycle following parturition due to breast feeding

d - iii

So, option 1 is correct.