



SECTION B

QUESTION 2:

-: (ii) :-

ANSWER:

INVITRO -

FERTILIZATION,

DEFINITION,

The fusion of male and female gametes outside the body in a test tube is called invitro-fertilization.



PROCEDURE:

1. In this procedure, first woman gives poly ovulatory drugs, so that to produce many eggs at a time.
2. Then mature eggs are obtained and placed in clean sterilized test tube.
3. And then taken semen from husband and mixed with eggs to fertilize the eggs.
4. The fertilized egg are grown up to blastula stage.
5. And then taken this fertilized egg and placed in mother uterus for remaining development of embryo.
6. Baby born through such process is called test tube baby.



-: (iii) :-

ANSWER:

Mendel chose pea plant due to following characteristics.

1. It can easily grow ✓
2. It is short life cycle ✓
3. It has self-pollinating power ✓
4. Cross pollination is possible. ✓
5. It can produce different kind of flowers. ✓

-: (i) :-

ANSWER:



ANTI-DIURETIC HORMONE:

Anti-diuretic hormone (ADH) is secreted by posterior lobe of pituitary gland. And secretions of pituitary gland are under the control of hypothalamus.

ADH is secreted by pituitary gland when body have deficiency of water.

FUNCTIONS:

It regulate water level in blood. when body has deficiency of water then ADH increase it to



normal by increasing permeability of distal convoluted tubules and collecting duct of nephron

OXYTOCIN:

Oxytocin hormone also release by posterior lobe of pituitary gland which secretion are under the control of hypothalamus

FUNCTION:

- 1) Oxytocin hormone release in child birth which help in child birth by contraction of uterine muscles.
- 2) It stimulate prolactin of mammary glands for milk production. ??



-:(ix):-

ANSWER:

RIBS:

Ribs form ribcage which protect semi-chamber of thoracic cavity.

It protects sensitive body organs or parts (e.g.: heart, lungs etc).

Total Bones:

Ribs
consists of 24 bones.
There are 12 pairs of ribs.

TRUE RIBS:

Those ribs which are directly attached with

sternum are called true ribs.

These ribs consists of 7 pairs.

FALSE RIBS:

Those ribs which are not directly attached with sternum but indirectly connect through intercostal arch.

These ribs have 3 pairs.

FLOATING RIBS:

Those ribs which are free and float in the cavity and not attached with sternum is called floating ribs.

These ribs are 2 pairs in numbers.



-: (VI) :-

ANSWER:

Endosymbiotic Theory of Evolution:

mendel endosymbiotic theory of evolution believed that all eukaryotes evolved from prokaryotes and believed that mitochondria and chloroplast were individual organisms but were engulfed by prokaryotes and become a part of it. This was because mitochondria and chloroplast had their own DNA, they can reproduce with in the cell and also they have their double mitochondria dig=?

—: (vii) :—

ANSWER:

DEFORESTATION

AFFECTING

ENVIRONMENT:

Deforestation means cutting down of trees. It affects the environment by following factors.

1. Due to deforestation, habitat of different animals destroyed. They become homeless.
2. Due to deforestation, flood occurs.
3. Trees play vital role in cleaning of air.



Due to deforestation, air become polluted and not clean.

4. Deforestation cause infertility of soil.

—: (xiii) :—

ANSWER:

SYNAPSE:

DEFINITION:

It is the junction between axon terminal of one neuron and dentrite of another neuron or between axon terminal and muscle fibre where information is transmitted

TYPES OF SYNAPSE:

1) ELECTRICAL SYNAPSE:

Electrical synapse is the electrically conductive link between two adjacent neurons and narrow gap is formed between two neurons is called electrical synapse.

SYNAPTIC CLEFT:

The gap between two neuron is called synaptic cleft. Synaptic gap between

two neurons in electrical synapse is 0.2 nm

SMALLER AND FASTER:

Electrical synapse is smaller synapse and faster conductive link.

2) CHEMICAL SYNAPSE:

Chemical synapse is the chemically conductive link between two neurons in which information of impulse is transmitted from one neuron to the next neuron by releasing neurotransmitter.

SYNAPTIC GAP:

In Chemical synapse synaptic gap is 0.2 nm

-: (xi) :-

ANSWER:

Simple Fracture

1. It is a type of bone fracture in which broken bone remain within the body.

2. In this type of bone fracture skin is not damaged.

3. It is internal

Compound Fracture

It is a type of bone fracture in which broken bone penetrating through the skin.

In this type of bone fracture skin is also damaged.

It is external



fracture.

fracture.

4. It is treated by professional doctors.

It is treated by pins and

-(xii):-

ANSWER:

REST MEMBRANE
POTENTIAL

ACTIVE
MEMBRANE
POTENTIAL

1. The net difference of charges between inner and outer surface of non-conducting neuron is called rest-membrane potential.

The net difference of charges of conducting neuron is called active membrane potential.

- | | |
|---|--|
| 2. It is more positive electrically inside than outside | It is more negative electrically outside than inside. |
| 3. In this, outflux of Na^+ ions occurs | In this, influx of Na^+ ions occurs |
| 4. This membrane potential occurs due to in polarized membrane. | This membrane potential occurs in depolarized membrane |

$\therefore (x) :-$

ANSWER:

SKIN AS



THERMOREGULATORY ORGAN:

⇒ Thermoregulation:

Thermoregulation
means to maintain body
temperature.

⇒ Skin As Thermoregulatory
Organ:

Skin acts as
thermoregulatory organ as
when temperature rises it
regulate the temperature or
decrease to produce
sweat by sweat glands



SECTION C:

QUESTION 5:

ANSWER:

AXIAL SKELETON:

Axial skeleton is located at the mid-line of the body.

It forms axis of the body. It has 80 bones.

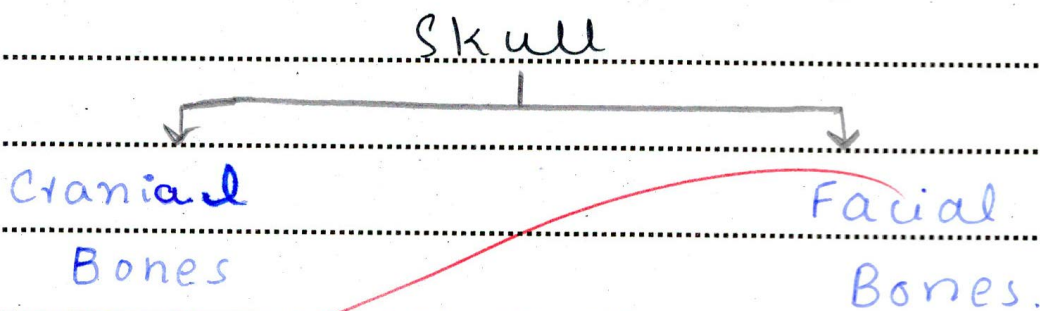
PARTS OF AXIAL SKELETON:

Axial skeleton consists of skull, vertebral column



and ribcage.

1) SKULL :



The skull consists of 22 bones, beside 6 tiny ear bones and 1 hyoid neck bone.

⇒ CRANIUM :

It consists of 8 bones, in which 4 bones are unpaired and 2 unpaired.

UnPaired Bones:

- 1) Frontal bone.
- 2) Occipital bone.



3. Sphenoid Bone.

4. Ethmoid Bone.

Paired Bones:

1) A pair of parietal bone.

2) A pair of temporal bones.

⇒ FACIAL BONES:

There are 14 facial bones, in which 6 are paired and 2 are unpaired.

Paired Bones:

1. A pair of zygomatic bones.

2. A pair of lacrimal bones.

3. A pair of nasal bones.

4. A pair of inferior nasal conchae.

5. A pair of maxilla.



A pair of palatine.

Unpaired Bones:

Vomer.

mandible.

EAR BONES:

There are 6 tiny ear bones called ossicles. These are malleus, incus, and stapes. Each ear contains these tiny ear bones.

NECK BONE:

There is one bone in the neck called hyoid bone which is U-shaped in structure at the base of mandible.



2) VERTEBRAL COLUMN:

Vertebral column extends from skull to pelvis and protect spinal cord.

Total Bones:

Vertebral column consists of 26 bones.

Vertebrae:

There are 33 vertebrae in human which divided into 4 groups.

CERVICAL VERTEBRAE:

There are 7 bones in neck region. They contain intervertebral disc.



THORACIC VERTEBRAE:

There are 12 bones in thoracic (chest) region. They contain intervertebral disc.

LUMBAR VERTEBRAE:

There are 5 bones in lumbar region with intervertebral disc.

PELVIC VERTEBRAE:

There are 9 bones in pelvic vertebrae. They have no intervertebral disc. They form two sets sacrum and coccyx.

Sacrum:

First 5 vertebrae



are fused together and
forms sacrum.

Coccyx or Tail Bones:

Last 4 bones are
fused together and form
tail bones.

3) RIBCAGE:

Ribs form
ribcage which protect
several important internal
organs such as lungs,
heart and brain etc

Total Bones:

It consists of
24 bones.

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CONTINUATION SHEET



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Pairs :

There are 12 pairs of ribs.

TRUE RIBS:

Those ribs which are directly attached with sternum are called true ribs. — : (۵) : —

These are 7 pairs in number.

FALSE RIBS:

Those ribs which are not directly attached with sternum but indirectly attach through intercostal arch.



These are 3 pairs in number.

FLOATING RIBS:

Those ribs which are free and float called floating ribs.

These are 2 pairs in number.

QUESTION 6:

—: (a) :—

ANSWER:

INSIGHT LEARNING:

Insight learning is a type of learning behaviour which are different from



because in this type of learning animal judges will power and the responses emerged at that time are : unexperienced

In this type, animal show particular response with respect to the situation.

Example:

Gorilla is an example of insight learning in which Gorilla was there and banana hanged on tree bark. After first attempt which Gorilla was do'd that jumping to banana and they missed it. After that box ← stuck and easily get bananas.



—: (b) :—

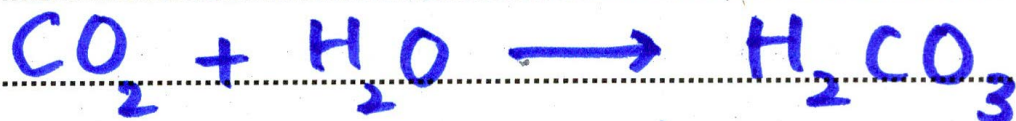
ANSWER:

TRANSPORT OF CO₂

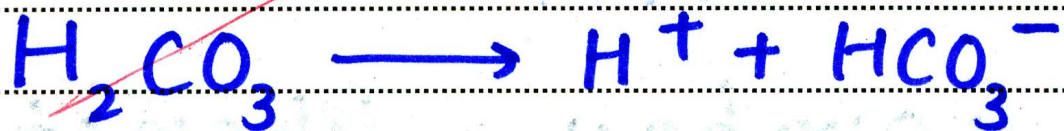
AS BICARBONATE

IONS:

As oxygen is taken by the cells, and then through metabolism, CO₂ produced inside the cell. the CO₂ in the blood react with water and form carbonic acid.



Carbonic acid then dissociates to form hydrogen ions and bicarbonate ions.



Chloride Shift:

The phenomenon in which Cl^- ions move inside and HCO_3^- ions move outside is called chloride shift.

CO_2 transport through bicarbonate ions -
maximum transport of



CO_2 through bicarbonate ions

QUESTION 4:

—: (a):—

ANSWER:

Bombay Phenotype:

The type of phenotype which is phenotypically 'O' and genetically A, B or AB.

Example: of Epistasis:

It is example of epistasis



H-Substance:

The H-gene release H-substance which make sure the formation of A or B Blood type when I gene is produce and it release enzyme A for antigen A and H-substance also release it confirms the blood type A.

Similar is for blood type B. But when (hh) recessive H-substance releases, then no blood phenotype appears. In this type the blood appears phenotypically O however it will be genetically A, B or AB



Discover in Bombay:

It is first discovered in Bombay that's why it is called Bombay phenotype.

RARE TYPE OF PHENOTYPE:

It is very rare type of phenotype.

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CONTINUATION SHEET



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—: (b) :—

Answer:

APPLICATIONS OF PCR:

Polymerase chain reaction is very important procedure by the following ways.



Medical Purposes:

1. It is used for medical purposes.



Finger Printing:

It is used in finger printing.



→ CRIME PURPOSES:

It is used in crime purposes.

→ IDENTIFICATION OF PATHOGENS:

It is used in identification of pathogens.

→ STUDY MICRO-ORGANISMS

we can also study micro-organisms through PCR.

make larger segments of DNA:

we can make large segments of DNA from short segment of DNA.

