18/08/2022
SLOT-01

Corporate Office : Aakash Tower, 8, Pusa Road, New Delhi-110005 | Ph.: 011-47623456

Answers & Solutions

for

CUET-2022 (Online)

(BIOLOGY)

Time : 3 hrs. M.M. : 200

IMPORTANT INSTRUCTIONS:

(1) The test is of 45 Minutes duration.

(2) The test contains 50 Questions out of which 40 questions need to be attempted.

(3) Marking Scheme of the test:

a. Correct answer or the most appropriate answer: Five marks (+5)

b. Any incorrect option marked will be given minus one mark (–1).

c. Unanswered/Marked for Review will be given no mark (0).

BIOLOGY

Choose the correct answer:

Question ID: 682581

The protein formed by the encoded gene expression in a heterologous host is called:

(A) Structural protein

(B) Recombinant protein

(C) Transposone

(D) Prohormone

Answer (B)

Sol. Option (B) is the correct answer as any protein encoding gene is expressed in a heterologous host is called recombinant protein.

Option (A) is incorrect as structural proteins are the most abundant class of proteins in nature and form structural elements.

Option (C) is incorrect as transposons are repetitive DNA sequences that have the capacity to move from one location to another in genome.

Option (D) is incorrect as prohormones are the precursors of hormones

Question ID: 682582

A kind of population interaction in which one species benefits and the other is neither harmed nor benefited?

(A) Commensalism (B) Ammensalism

(C) Mutualism (D) Parasitism

Answer (A)

Sol. Commensalism is a type of population interaction where one species benefits and the other remains unaffected. It can also be denoted by (+, 0)

Question ID: 682583

Fruit which develop only from the ovary are called-

(A) False fruits

(B) Parthenocarpic fruits

(C) True fruits

(D) Apomictic fruits

Answer (C)

Sol. True fruits are developed only from ovary while in false fruits, parts other than ovary also contributes.

Question ID: 682584

Algal blooms do not cause-

(A) Imbalance in ecosystem dynamics

(B) Deterioration of the water quality and fish mortality

(C) Reduction in BOD

(D) Increase in organic matters in water body

Answer (C)

Sol. Algal blooms are formed by overproduction of algae in nutrient-rich or eutrophicated water-bodies. They can cause harmful effects on aquatic species by increasing organic matter and thus BOD of water body increases too.

Question ID: 682585

Observe the given figure and name the step used in Recombinant DNA Technology

(A) Selecting (B) Scrolling

(C) Spiraling (D) Spooling

Answer (D)

Sol. Option (D) is the correct answer as the given figure represents the process of spooling which is a method of extraction of substance like DNA in the form of a spool over a glass rod.

Question ID: 682586

Perisperm differs from endosperm is that it is-

(A) Haploid having reserve food

(B) Polyploid having reserve food

(C) Triploid having no reserve food

(D) Diploid having no reserve food

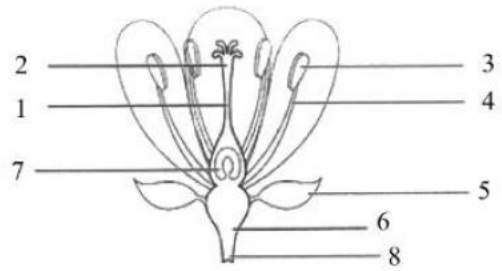
Answer (D*)

Sol. Perisperm is remnant of nucellus and thus is diploid. Endosperm is triploid nutritious tissues

Both endosperm and perisperm store reserve food.

Question ID: 682587

Identify and name the two parts in a flower which are most important units of sexual reproduction?



(A) 1 - Style, 3 - stamen

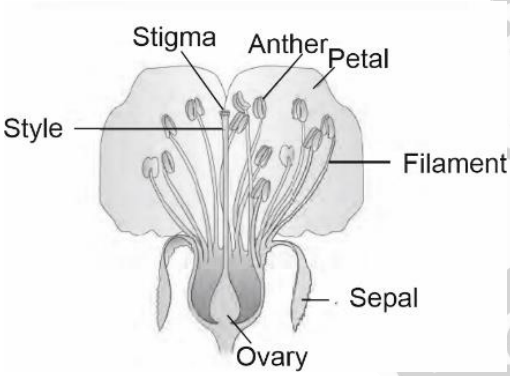
(B) 4 - filament, 6 - thalamus

(C) 3 - Anther, 7 - ovary

(D) 2 – Stigma, 5 - sepals

Answer (C)

Sol.



In the question, most important units of sexual reproduction are asked which are Anther and ovary.

So correct option is (C).

Question ID: 682588

Density of population tells us about-

(A) total number of individuals of a species

(B) total area occupied by a species

(C) number of individuals present per unit space in a given time

(D) population growth in a particular time span

Answer (C)

Sol. Pollution density generally measured as number of individuals of species present in unit space in a given time.

Percent cover or biomass can also be used for measuring population density

Question ID: 682589

Select the hormones produced in women only during pregnancy

A. Estrogen

B. Human chronic gonadotroph

C. Progesterone

D. Human placental lactogen

E. Relaxin

Choose the correct answer from the options given below:

(A) B and D only

(B) B and E only

(C) A, B and C only

(D) B, D and E only

Answer (D)

Sol. Option (D) is the correct answer as, hCG (human chorionic gonadotropin), hpL (human placental lactogen) and relaxin are produced in humans only during pregnancy.

Estrogen and progesterone are also secreted in a non-pregnant woman.

Question ID: 6825810

Which of the following is not an example of terrestrial ecosystem?

(A) Wetland

(B) Grassland

(C) Forest

(D) Desert

Answer (A)

Sol. Wetland is an aquatic ecosystem. Rest all are examples of terrestrial ecosystems.

Question ID: 6825811

Transfer of an ovum collected from a donor into fallopian tube is called _____ method.

(A) ZIFT

(B) ICST

(C) GIFT

(D) IVF

Answer (C)

Sol. Option (C) is the correct answer as:

GIFT is the method of transfer of ovum collected from a donor into the fallopian tube of another female who cannot produce one, but can provide suitable environment for fertilisation.

Option (A) is not the correct answer as ZIFT stands for the transfer of zygote (upto 8 blastomeres) into the fallopian tube.

Option (B) is not the correct answer as ICSI is the method of injecting the sperms directly into the ovum *in-vitro*.

Option (D) is not the answer as IVF stands for *in-vitro* fertilisation.

Question ID: 6825812

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**.

Assertion A: Leydig cells synthesise and secrete male testicular hormones called androgens.

Reason R: Androgens, stimulate the process of spermatogenesis.

In the light of the above statements, choose the ***most appropriate*** answer from the options given below:

(A) Both A and R are correct and R is the correct explanation of A

(B) Both A and R are correct are R is NOT the correct explanation of A

(C) A is correct but R is not correct

(D) A is not correct but R is correct

Answer (A)

Sol. Option (A) is the correct answer as at the age of puberty due to significant increase in the secretion of gonadotropin releasing hormone there is an increase in the secretion of gonadotropins *i.e*., LH and FSH. LH acts on the Leydig cells and stimulates synthesis and secretion of androgens.

Question ID: 6825813

The inactive protoxin gets converted into an active form due to the _____

(A) Alkaline pH of insect's gut

(B) Temperature and acidic pH of gut

(C) Exposure to light

(D) Exposure to light and acidic pH of gut

Answer (A)

Sol. Option (A) is the answer as the Bt toxin protein exist as inactive protoxins but once an insect ingests the inactive toxin, it is converted into an active form of toxin due to alkaline pH of the gut which solubilise the crystals.

Question ID: 6825814

Which of the following gets embedded in the endometrium during implantation?

(A) Zygote (B) Morula

(C) Blastocyst (D) Embryo

Answer (C)

Sol. Option (C) is the answer as the blastocyst gets embedded in the endometrium of the uterus.

Option (A) is not the answer as zygote is single – celled and it divides mitotically to develop into morula (8-16 celled).

Option (B) is not the answer as morula continues to divide and transforms into blastocyst.

Option (D) is not the answer as embryo with 8 blastomeres is called morula.

Question ID: 6825815

Introduction of which one of the following organism's species did cause decline or extinction of indigenous species?

(A) Eicchornia Crassipes

(B) Nile Perch

(C) Clarias gariepinus

(D) Steller's Sea cow

Answer (D*)

The correct option given by NTA is option (D) but as per NCERT it should be option (B).

Sol. The Nile perch introduced into Lake Victoria led eventually to the extinction of ecologically unique assemblage of more than 200 species of cichlid fish in the lake.

Clarias gariepinus, African catfish pose threat to the indigenous catfish in our rivers.

Eicchornia cause environmental damage and pose threat to our native species.

Stellar's sea cow got extinct due to overexploitation by humans.

Question ID: 6825816

Match List I with List II

	LIST I		LIST II
A.	Progestasert	I.	once a week pill
B.	*Saheli*	II.	hormone releasing IUD
C.	Lippe's Loop	III.	Non-medicated IUD
D.	Periodic abstinence	IV.	Natural method of birth control

Choose the correct answer from the options given below:

(A) A - II, B - III, C - I, D - IV

(B) A - I, B - II, C - IV, D - III

(C) A - II, B - I, C - III, D - IV

(D) A - II, B - IV, C - I, D - III

Answer (C)

Sol. Option (C) is correct answer because

- Progestasert is a hormone-releasing IUD.
- Saheli is a 'once a week' pill.
- Lippe's loop is a non-medicated IUD.
- Periodic abstinence or rhythm method is a natural method of contraception in which couples abstain sexual intercourse from day 10 to 17 of a 28 days menstrual cycle.

Question ID: 6825817

The vital link that ensures continuity of species between organisms of one generation and the next generation is

(A) Male gamete (B) Female gamete

(C) Zygote (D) Syngamy

Answer (C)

Sol. The vital link that ensures continuity of species between organisms of one generation and the next generation is the zygote.

The process of fusion of gamete is called syngamy and it results in formation of diploid zygote.

Gametes are reproductive cells of a sexually reproducing organisms.

Question ID: 6825818

In case of COVID positive patients, presence of corona virus is suspected only when the pathogen has produced a disease symptom. But when the symptoms of the disease has not appeared, the corona virus in the body can be detected by–

(A) Enzyme linked immuno-sorbent Assay (ELISA) only

(B) Recombinant DNA technology only

(C) Reverse transcriptase Polymerase Chain Reaction (RT-PCR)

(D) Widal Test

Answer (C)

Sol. Option (C) is the correct answer because in RT-PCR, RNA of retrovirus is reverse transcripted with the help of enzyme reverse transcriptase. DNA formed is amplified with the help of PCR. So a minute quantity of corona virus can be detected with the help of RT-PCR.

ELISA is based on antigen – antibody reaction.

Widal test is a diagnostic test for typhoid.

Question ID: 6825819

Bacillus thuringiensis is a biocontrol agent against _____

(A) Nematode (B) Fungal pathogen

(C) Insect pests (D) Bacterial pathogen

Answer (C)

Sol. *Bacillus thuringiensis* is a biocontrol agent against insect pests.

It is introduced in the field crop in order to control butterfly caterpillars (larva)

Question ID: 6825820

Arrange the following events in the female reproductive cycle in their natural sequence.

A. Ovulation

B. Growth of corpus luteum

C. Sudden increase in level of LH

D. Secretion of FSH

E. Growth of ovarian follicle and oogenesis

Choose the correct answer from the options given below:

(A) E - D - A - B – C (B) D - E - C - A - B

(C) E - C - A - D – B (D) D - A - C - E - B

Answer (B)

Sol. Option (B) is the correct answer because the correct sequence of the events in the female reproductive cycle is :

D – Secretion of FSH

E – FSH leads to the growth of ovarian follicles into a fully mature Graafian follicle

C – During the mid of menstrual cycle, there is sudden increase in the level of LH (LH surge)

A – LH surge leads to ovulation

B – It is followed by luteal phase in which the remaining parts of the Graafian follicle transform as the corpus luteum.

Question ID: 6825821

Which of the following methods are commonly used in DNA fingerprinting?

(A) Genetic transformation

(B) PCR and RFLP

(C) Bioprospecting

(D) Molecular diagnosis

Answer (B)

Sol. PCR and RFLP are used in DNA fingerprinting to increase the sensitivity of the technique.

Bioprospecting is defined as exploring molecular, genetic and species level diversity for products of economic importance.

Molecular diagnosis is referred to as detection of genomic variant.

Question ID: 6825822

Which layer of microsporangium is nutritive in function?

(A) Epidermis

(B) Endothecium

(C) Middle Layers

(D) Tapetum

Answer (D)

Sol. Tapetum is innermost wall layer of microsporangium and it provides nourishment to developing pollen grains.

Outer three wall layers, epidermis, endothecium and middle layers perform the function of protection and help in dehiscence of anther to release pollen.

Question ID: 6825823

Match List I with List II

	LIST I		LIST II
A.	Catalytic converter	I.	Particulate matter
B.	Incinerators	II.	Organic waste
C.	Electrostatic precipitator	III.	Hospital Waste
D.	Sewage treatment plant	IV.	Carbon monoxide and nitrogen oxides

Choose the correct answer from the options given below:

(A) A - III, B - II, C - IV, D - I

(B) A - IV, B - III, C - I, D - II

(C) A - II, B - III, C - I, D - IV

(D) A - I, B - II, C - IV, D - III

Answer (B)

Sol. When exhaust passes through catalytic converter then carbon monoxide and nitrogen oxide are converted to carbon dioxide and nitrogen gas.

The use of incinerator is crucial for disposal of hospital waste.

Electrostatic precipitator can remove over 99% of particulate matter.

In sewage treatment plant biodegradation of organic matter occurs by microorganisms.

Question ID: 6825824

During gene therapy, which vector is used to introduce functional ADA cDNA into lymphocyte

(A) Plasmid (B) Bacteriophage

(C) pBR322 (D) Retrovirus

Answer (D)

Sol. Option (D) is correct answer because disarmed retrovirus is used as a vector to introduce functional ADA cDNA into the lymphocytes, which are subsequently returned to the patient.

Plasmids are extra chromosomal double stranded circular DNA present in most of the bacteria.

Bacteriphages are viruses which infect bacteria.

pBR322 is a plasmid vector of *E. coli*.

Question ID: 6825825

The animals that feed on herbivores like insects, birds and mammals in terrestrial ecosystem, are called _____

(A) Saprotrophs

(B) Primary consumers

(C) Secondary carnivores

(D) Primary carnivores

Answer (D)

Sol. The animals that feed on herbivores are called primary carnivores. These are also called secondary consumers. Herbivores are primary consumers.

Secondary carnivores feed on primary carnivores.

Saprotrophs are decomposers. They act over the dead organic matter.

Question ID: 6825826

Recombinant Proteins are expressed in

(A) Cloning vector

(B) Heterology Host

(C) Homologous chromosomes

(D) Promotor

Answer (B)

Sol. Option (B) is the correct answer because recombinant proteins are expressed in heterologous host. The hosts which have foreign gene are called heterologous hosts.

Option (C) is not the answer because chromosomes which are similar and present together are called homologous chromosomes.

Option (A) is not the answer because cloning vectors are used in genetic engineering for gene transformation.

Option (D) is not the answer because promotor is a type of gene which is helpful in protein synthesis.

Question ID: 6825827

27. The chemical carcinogens present in tobacco smoke is the major cause of

(A) AIDS (B) Lung Cancer

(C) Allergy (D) Pneumonia

Answer (B)

Sol. Option (B) is the correct answer as the chemical carcinogens present in tobacco smoke have been identified as a major cause of lung cancer.

Option (A) is not the answer as AIDS is caused by HIV. It is a sexually transmitted disease.

Option (C) is not the answer as allergy is defined as the exaggerated response of the immune system towards certain antigens present in the environment.

Option (D) is not the answer pneumonia is a bacterial disease of respiratory tract.

Question ID: 6825828

Match the features that are required to facilitate cloning of alien DNA into a vector

List I (Features to facilitate)		**List II (Cloning Vector)**	
A.	Origin of replication (ori)	I.	*Agrobacterium tumefaciens*
B.	Selectable Marker	II.	Recognition sites commonly used for restriction enzymes
C.	Cloning sites	III.	Helps in identifying and eliminating non-transformants
D.	Vectors for cloning genes in plants	IV.	Sequence from where replication starts

Choose the correct answer from the options given below

(A) A-IV, B-III, C-II, D-I

(B) A-I, B-II, C-III, D-IV

(C) A-II, B-III, C-IV, D-I

(D) A-III, B-I, C-II, D-IV

Answer (A)

Sol. Option (A) is the correct answer because

- Origin of the replication (ori) is the sequence from where the replication starts.
- Selectable markers in vector help in identifying and eliminating non-transformants and selectively permitting the growth of the transformants.
- Cloning sites are the recognition sites commonly used for restriction enzymes.
- *Agrobacterium tumefaciens* is used as a cloning vector for plants. It is called as natural genetic engineer of plants.

Question ID: 6825829

Which of the following is effect of steroid in males?

(A) Premature baldness

(B) Deepening of voice

(C) Excessive hair growth on face and body

(D) Enlargement of clitoris

Answer (A)

Sol. Option (A) is the correct answer because the side effects of the use of anabolic steroids in males include premature baldness, increased aggressiveness, breast enlargement, etc.

The side-effects of the use of anabolic steroids in females include masculinisation, deepening of voice, excessive hair growth on face and body, enlargement of clitoris and abnormal menstrual cycles.

Question ID: 6825830

30. Which of the following cells produce antibodies?

(A) Monocytes

(B) PMNL neutrophils

(C) T-lymphocytes

(D) B- lymphocytes

Answer (D)

Sol. Option (D) is the correct answer because the B-lymphocytes produce an army of proteins in response to pathogens into our blood to fight with them. These proteins are called antibodies.

The T-cells themselves do not secrete antibodies but help B cells to produce them.

Neutrophils and monocytes are phagocytic cells included under cellular barriers of innate immunity.

Question ID: 6825831

Nutrient cycles are of two types:

(A) Gaseous and solid

(B) Liquid and sedimentary

(C) Gaseous and sedimentary

(D) Aquatic and Gaseous

Answer (C)

Sol. Nutrient cycles are of two types:

(i) Gaseous cycle – Biogeochemical is non-mineral. Exchange of nutrients occur in gaseous or vapour form. Reservoir pool is atmosphere or hydrosphere.

e.g. Nitrogen, Carbon, Oxygen and Hydrogen cycle.

(ii) Sedimentary cycle – Biogeochemical is mineral. Reservoir pool is earth's crust or lithosphere.

e.g. Sulphur and Phosphorus cycle.

Question ID: 6825832

Technology of biogas production in India was developed due to the efforts of

A. GEAC B. ICAR

C. IARI D. IRRI

E. KVIC

Choose the correct answer from the options given below:

(A) A and B only

(B) C and D only

(C) B and D only

(D) C and E only

Answer (D)

Sol. The technology of biogas production was developed in India mainly due to the efforts of Indian Agricultural Research Institute (IARI) and Khadi and Village Industries Commission (KVIC)

Question ID: 6825833

The bacterium responsible for breakdown of cellulose in a biogas plant is

(A) *Acetobacter aceti*

(B) *Lactobacillus*

(C) *Clostridium*

(D) *Methanobacterium*

Answer (D)

Sol. Certain bacteria, which grow anaerobically on cellulosic material, produce large amount of methane along with CO_2 and H_2. These bacteria are collectively called Methanogens, and one such common bacterium is *Methanobacterium*.

Question ID: 6825834

With reference to processing of hn RNA, which of the following statements is/are INCORRECT?

A. Introns are removed and exons are joined directly splicing.

B. Capping and Tailing occurs at 5′ end and 3′ end respectively.

C. Addition of 200-300 adenylated residues means capping.

D. Addition of guanosine triphosphate takes place at 5′ end.

E. Processing take place in the nucleus and converts hn RNA into functional RNA.

Choose the correct answer from the options given below

(A) B only (B) C only

(C) B and C only (D) B and D only

Answer (B)

Sol. During processing of hn RNA,

(i) Splicing occurs which is removal of introns and joining of exons in a defined order.

(ii) Methyl guanosine triphosphate is added at 5′ end of hn RNA. This is called capping.

(iii) Tailing occurs by the addition of adenylate residues of about 200 – 300 at 3′ end of hn RNA.

(iv) The fully processed hn RNA is called mRNA and it is transported out of the nucleus for translation.

Question ID: 6825835

Match List I with List II

List I (Name of scientists)		**List II (Discovery)**	
A.	Alec Jeffreys	I.	Lac Operon
B.	Francois Jacob and Jacque Monod	II.	Deciphering of genetic code
C.	Marshall Nirenberg	III.	Semiconservative replication of DNA
D.	Meselson Stahl	IV.	DNA Fingerprinting

Choose the correct answer from the options given below:

(A) A-IV, B-I, C-II, D-III (B) A-I, B-III, C-IV, D-II

(C) A-II, B-III, C-I, D-IV (D) A-IV, B-II, C-III, D-I

Answer (A)

Sol.

- The technique of DNA fingerprinting was developed by Alec Jeffreys.
- Jacob and Monod proposed the model of gene regulation, known as Operon model, in bacteria.
- Nirenberg and Matthaei used a synthetic poly U RNA and deciphered the genetic code by translating this as polyphenylalanine.
- Meselson and Stahl proved the semi-conservative model of DNA replication in *E. coli*

Question ID: 6825836

The pyramid of biomass in sea is generally inverted because:

(A) Sunlight is filtered through sea water leading to less photosynthesis

(B) Of the high salt content of sea water

(C) The biomass of phytoplankton far exceeds that of fishes

(D) The biomass of fishes far exceeds that of phytoplankton

Answer (D)

Sol. In sea ecosystem, pyramid of biomass is generally inverted, because the biomass of fishes far exceeds the biomass of producers (phytoplanktons) and primary consumers (zooplanktons), due to their large size and longer life span.

Question ID: 6825837

One of the following is NOT a characteristic/criteria of genetic materials, identify it:

(A) Genetic material should be able to generate its replica

(B) Genetic material should be stable chemically and structurally

(C) It should not provide the scope for mutations

(D) It should be able to express itself in the form of Mendelian characters.

Answer (C)

Sol. A molecule that can act as genetic material must fulfil the following criteria:

(i) It should be chemically and structurally stable.

(ii) It should be able to generate its replica

(iii) It should provide scope for slow mutation that are required for evolution.

(iv) It should be able to express itself in the form of Mendelian characters.

Question ID: 6825838

Adenine pairs with Thymine through how many hydrogens bonds?

(A) 2 (B) 3

(C) 4 (D) 5

Answer (A)

Sol. Adenine forms two hydrogen bonds with thymine from opposite strand in a DNA molecule.

Similarly, guanine is bonded with cytosine with three hydrogen bonds.

Question ID: 6825839

A pure breeding garden pea plant was crossed with a pure dwarf plant. The plant produced 400 seeds. The seeds were sown to produce plants. The phenotype of the plants in next generation will be

(A) All tall

(B) All dwarf

(C) 300 tall and 100 dwarf plants

(D) All plants of intermediate height

Answer (A)

Sol. Tallness and dwarfness in pea plants are dominant and recessive traits respectively. The cross can be represented as follows:

Parents TT × tt

	T	T
t	Tt Tall	Tt Tall
t	Tt Tall	Tt Tall

F_1 generation

All are tall.

Question ID: 6825840

40. If in a pond there were 150 carps found last year and through reproduction 450 new carps are added in the pond, what will be the birth rate here?

(A) 4 offsprings per carp per year

(B) 3 offsprings per carp per year

(C) 2 offsprings per carp per year

(D) 1 offspring per carp per year

Answer (B)

Sol. Given: -

Number of individuals last year (N) = 150

Number of individuals added in one year (ΔN) = 450

Time period (ΔT) = 1 year

$$\text{Birth rate} = \frac{\Delta N}{N\Delta t} = \frac{450}{150 \times 1}$$

= 3 offsprings per carp per year

Question ID:6825841

When the life appear on the earth after its formation?

(A) After 200 million years

(B) After 300 million years

(C) Atter 500 million years

(D) After 250 million years

Answer (C)

Sol. Option (C) is the correct answer because life appeared 500 million years after the formation of earth, i.e., almost four billion years ago.

Question ID:6825842

According to the early Greek thinkers, the unit of life which were transferred to different planets were-

(A) Spores (B) Water

(C) Oxygen (D) Methane

Answer (A)

Sol. Option (A) is the correct answer because according to the early Greek thinkers, the unit of life called spores were transformed to different planets including earth. It is still a favourite idea of some astronomers.

Question ID:6825843

Louis Pasteur by careful experimentation demonstrated that life comes from-

(A) Killed yeast (B) Rotting matter

(C) Other plants (D) Pre-existing life

Answer (D)

Sol. Option (D) is the correct answer because Louis Pasteur by careful experimentation demonstrated that life comes from pre-existing life.

Theory of spontaneous generation stated that living organisms arise from decaying and rotting matter. This was experimentally disproved by Louis Pasteur.

Question ID:6825844

Oparin and Haldane proposed the theory that the first form of life could have come from-

(A) Non-living organic molecules

(B) Inorganic molecules

(C) UV rays

(D) CO_2 and water

Answer (A)

Sol. Option (A) is the correct answer because Oparin and Haldane proposed that the first forms of life could have come from pre-existing non-living molecules (e.g. RNA, protein etc.) and that formation of life was preceded by chemical evolution.

Question ID:6825845

The theory of Chemical evolution was studied and tested in laboratory by–

(A) Charles Darwin (B) S.L. Miller

(C) Louis Pasteur (D) Haldane

Answer (B)

Sol. Option (B) is the correct answer because based on the hypothesis proposed by Oparin and Haldane, S.L. Miller provided an experimental evidence of the chemical evolution in 1953 in a laboratory set-up.

Louis Pasteur dismissed the theory of spontaneous generation once and for all.

Question ID: 6825846

The explant used in tissue culture must show _____

(A) Encystation (B) Sporulation

(C) Dioecy (D) Totipotency

Answer (D)

Sol. The capacity to generate a whole plant from any cell/explant is called totipotency.

Therefore, the explant used in tissue culture must show totipotency.

Formation of cyst in unfavourable conditions by unicellular organisms is called encystation.

Sporulation is the production of spores by the organisms such as fungi.

Having male and female sex organs in different individuals is called dioecy.

Question ID: 6825847

Virus free plants of banana are developed by using _____

(A) Protoplasts (B) Meristem

(C) Cotyledon (D) Leaf

Answer (B)

Sol. Pathogen free clones of plants can be obtained through meristem culture because meristem is free of virus due to high concentration of auxins and rapid rate of cell division.

Question ID: 6825848

Pomato is developed by _____ technique.

(A) Micropropagation

(B) Mutation breeding

(C) Biofortification

(D) Somatic hybridization

Answer (D)

Sol. Pomato was developed by somatic hybridization (protoplast fusion) of two different genera tomato and potato. It is intergeneric somatic hybrid. The method of producing thousands of plants through tissue culture is called micropropagation.

Biofortification is breeding of crops for higher level of nutrients.

Mutation breeding can make crops resistant against diseases.

Question ID: 6825849

In tissue culture, the nutrient medium usually contains _____ as a carbon source.

(A) Sucrose

(B) Maltose

(C) Carbon dioxide

(D) Calcium carbonate

Answer (A)

Sol. In tissue culture, the nutrient medium usually contains sucrose as carbon source.

Question ID: 6825850

Protoplasts are obtained by digestion of _____ of the cells

(A) Nuclei (B) Plasma membranes

(C) Cell walls (D) Proteins

Answer (C)

Sol. For protoplast fusion, the two cells of desired plants are first treated with enzymes pectinase and cellulase. These enzymes dissolve the cell wall and as a result naked protoplasts are produced.

❑ ❑ ❑