



# BIOLOGY

## BOOKS - SARAS PUBLICATION

### MODEL QUESTION PAPER -3

#### Exercise

1. Read the statements given below and identify the correct statement

- A. Scientific names favour multiple naming  
for the same kind of a organism
- B. scientific names are used all over the  
world
- C. Scientific names are often descriptive  
and tell us some important character of  
an organism
- D. Scientific names indicate relationship  
between species

**Answer:**



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2. Which one of the following animals is correctly matched with its particular named taxonomic category?

- A. Tiger-tigris, Species
- B. Cuttle fish - Mollusca, class
- C. Humans - Primate, family
- D. Housefly - Musca, order

**Answer:**



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3. Which of the following shows coiled RNA strand and capsomeres?

- A. Poliovirus
- B. Tobacco Mosaic virus
- C. Measles virus
- D. Retrovirus

**Answer:**



4. Infectious proteins are present in:

- A. geminiviruses
- B. prions
- C. viroids
- D. satellite viruses

**Answer:**



5. Which of the following is a Gram negative bacterium

A. *Escherichia coli*

B. *Bacillus subtilis*

C. *Streptomyces coelicolor*

D. *Mycobacterium tuberculosis*

**Answer:**



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6. Which one of the following shows isogamy with nonflagellated gametes?

A. Sargassum

B. Ectocarpus

C. Ulothrix

D. Spirogyra

**Answer:**



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7. Identify the algae, which exhibits diplontic life cycle

A. Spirogyra

B. Chlamydomonas

C. Fucus

D. Volvox

**Answer:**



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8. Planaria posses high capacity of:

A. metamorphosis

B. regeneration

C. alternation of generation

D. bioluminescence

**Answer:**



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9. An example of edible underground stem is

A. carrot

B. groundnut

C. sweet potato

D. potato

**Answer:**



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**10.** An aggregate fruit is one which develops from  
from

A. multicarpellary syncarpous gynoecium

B. multicarpellary apocarpous gynoecium

C. complete inflorescence

D. multicarpellary superior ovary

**Answer:**



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**11.** Which one of the following is not a lateral meristem

A. Intrafascicular cambium

B. Interfascicular cambium

C. Phellogen

D. Intercalary meristem

**Answer:**



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**12.** Choose the wrongly matched pair regarding the position of reproductive structure in earthworm

A. Testes - 10th and 11th

B. Spermathecae - 6th to 9th segments

C. Male genital pore - 9th segment

D. Ovaries - Inter segmental septum of 12th  
and 13th segments

**Answer:**



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**13.** Vagina , oesophagus, urethra contain which type of tissue?

A. Stratified squamous epithelium

B. Simple squamous epithelium

C. Ciliated epithelium

D. Columnar epithelium

**Answer:**



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**14.** What are those structures that appear as 'beads-on-string' in the chromosomes when viewed under electron microscope?

- A. Nucleotides
- B. Nucleosomes
- C. Base pairs
- D. Genes

**Answer:**



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15. What is true about ribosomes?

- A. These are found only in eukaryotic cells
- B. These are self-splicing introns of some RNAs
- C. The prokaryotic ribosomes are 80 S, where 'S' stands for sedimentation coefficient
- D. These are composed of ribonucleic acid and proteins



**Answer:**



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**16.** Coenzymes NAD and NADP contain vitamins

A. Niacin

B. biotin

C. soyabean

D. spinach

**Answer:**



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17. The enzyme recombinase is required at which stage of meiosis

A. Pachytene

B. Zygotene

C. Diplotene

D. Diakinesis

**Answer:**



**18.** Flaccid cell means

A. cell turgidity

B. plasmolysed cell

C. the cell in which water flows in and out  
of cell are in equilibrium

D. the cell kept in hypotonic solution

**Answer:**



19. The rate of transpiration in plants is dependent upon

A. temperature and soil

B. light and temperature

C. wind, temperature and light

D. light, temperature, atmospheric humidity and wind

**Answer:**





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20. Deficiency symptoms of nitrogen and potassium are visible first in .....

A. senescent leaves

B. young leaves

C. roots

D. buds

**Answer:**



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## 21. Nitrifying bacteria

- A. convert free nitrogen to nitrogen compounds
- B. convert proteins in to ammonia
- C. reduce nitrates to free nitrogen
- D. oxidise ammonia to nitrates

**Answer:**



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22. Which one of the following is not a micronutrient?

A. Molybdenum

B. Magnesium

C. Zinc

D. Boron

**Answer:**



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23. Which of the following statements regarding cycle flow of electrons during light reaction is false?

A. This process takes place in the stromal lamella

B. ATP synthesis takes place

C.  $NADPH + H^+$  is synthesised

D. Takes place only when light of wavelength beyond 680 nm is available for excitation



**Answer:**



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**24.** Classify photosynthetic bacteria and give example .

A. pigment system - 1

B. pigment system - II

C. Both 'a' and 'b'

D. Some other pigments P890

**Answer:**



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**25.** Oxygen content reduction makes the glycolyse (glycogenesis) intensity increased due to

- A. increase of ADP concentration in cell
- B. increase of  $NAD^+$  concentration in cel
- C. increase of ATP concentration in cell

D. increase of concentration of peroxides  
and free radicals

**Answer:**



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**26.** Which one of the following growth regulators is known as ‘stress hormone’?

A. Abscisic acid

B. Ethylene

C.  $GA_3$

D. Indole acetic acid

**Answer:**



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**27. Photoperiodism influences**

A. seed germination

B. vegetative growth

C. internode elongation

D. All of these

**Answer:**



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**28.** The initial step in the digestion of milk in humans is carried out by?

A. Lipase

B. Trypsin

C. Rennin

D. Pepsin

**Answer:**



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**29.** Characteristic of mammalian liver is

- A. Kupffer cells and leucocytes
- B. Leucocytes and canaliculi
- C. Glisson's capsules and Kupffer cells
- D. Glisson's capsule and leucocytes

**Answer:**



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**30.** The Oxygen Dissociation Curve is

- A. sigmoid
- B. parabolic
- C. hyperbolic
- D. straight line

**Answer:**



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31. Which one of the following statements is correct regarding blood pressure

A. 190 / 110 mm Hg may harm vital organs

like brain and kidney

B. 130 / 90 mm Hg is considered high and

requires treatment

C. 100 / 55 mm Hg is considered an ideal

blood pressure



D. 105 / 50 mm Hg makes one very active

**Answer:**



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32. Match the following columns :-

| Column I                           | Column II  |
|------------------------------------|--|
| A. Proximal convoluted tubule      | 1. Impermeable to sodium ions                          |
| B. Distal convoluted tubule        | 2. Impermeable to water                                |
| C. Descending limb of Henle's loop | 3. Facultative reabsorption of water and $\text{Na}^+$ |
| D. Ascending limb of Haile's loop  | 4. reabsorption of nutrients and $\text{Na}^+$         |

Codes

A B C D

A B CD

A. 3 4 2 1

B. 3 4 1 2

C. 4 3 1 2

D. 4 2 1 3

**Answer:**



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**33.** The U-shaped bone present at the base of the buccal cavity is

A. malleus

B. ethmoid

C. zygomatic

D. hyoid

**Answer:**



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**34. Smallest bone in the human is**

A. incus

B. stapes

C. malleus

D. maxilla

**Answer:**



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**35.** Hearing is controlled by

A. cerebellum

B. diencephalon

C. frontal lobe of cerebrum

D. temporal lobe of cerebrum

**Answer:**



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**36.** Vagus nerve is a

A. mixed X cranial nerve

B. mixed XI cranial nerve

C. mixed X thoracic nerve

D. mixed XI thoracic nerve

**Answer:**



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**37.** Injury to adrenal cortex is not likely to affect the secretion of which one of the following?

A. Aldosterone

B. Both androstenedione and dehydroepiandrosterone

C. Adrenaline

D. Cortisol

**Answer:**



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**38.** Vegetative propagation in pisita occurs by

A. stolon



B. offset

C. runner

D. sucker

**Answer:**



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**39.** Which part would be most suitable for raising virus-free plants for micropropagation?

A. Bark

B. Vascular tissue

C. Meristem

D. None of the above

**Answer:**



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**40.** Select the answer which correctly matches the endocrine gland with the hormone it secretes and its functional deficiency

symptom:

| Endocrine gland        | Hormone             | Functions/ deficiency symptoms                   |
|------------------------|---------------------|--|
| 1) Anterior pituitary  | Oxytocin            | Stimulates uterus contraction during child birth |
| 2) Posterior pituitary | Growth Hormone (GH) | Over secretion stimulates abnormal growth        |
| 3) Thyroid gland       | Thyroxine           | Lack of iodine in diet results in goitre         |
| 4) Corpus luteum       | Testosterone        | Stimulates spermatogenesis                       |



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41. Function of filiform apparatus to

A. recognise the suitable pollen at stigma

B. stimulate division of generative cell

C. produce nectar

D. guide the entry of pollen tube

**Answer:**



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**42. Apomictic embryos in citrus arise from:**

A. synergids

B. maternal sporophytic tissue in ovule

C. antipodal cells

D. diploid egg

**Answer:**



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**43.** Incycas, pollination occurs at \_\_\_\_\_ celled stage

A. one

B. two

C. three

D. four

**Answer:**



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**44.** The main function of mammalian corpus luteum is to produce

A. oestrogen

B. progesterone

C. human chorionic gonadotropin

D. relaxin

**Answer:**



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**45.** Seminal plasma in human males is rich in

A. fructose and calcium

B. glucose and calcium

C. DNA and testosterone

D. ribose and potassium

**Answer:**



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**46.** Primary spermatocyte differs from spermatogonium in

A. number of chromosomes

B. size and volume



C. DNA content

D. size of chromosomes

**Answer:**



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**47.** Tubectomy is a method of sterilisation in which

A. a small part of the Fallopian tube is removed or tied up

B. ovaries are removed surgically

C. small part of vas deferens is removed or  
tied up

D. uterus is removed surgically

**Answer:**



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**48.** Cu ions released from copper-releasing  
Intra Uterine Devices (IUDs)

A. make uterus unsuitable for implantation

B. increase phagocytosis of sperms

C. suppress sperm motility

D. prevent ovulation

**Answer:**



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**49.** Which of the following statements is not true of two genes that show 50 % recombination frequency?

A. The genes may be on different chromosomes

B. The genes are tightly linked

C. The genes show independent assortment

D. If the genes' are present on the same chromosome, they undergo more than one crossovers in every meiosis

**Answer:**



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50. Four children of a couple have blood groups A, B, AB and O. What could be the Genotype of the parents?

A. both parents are homozygous for 'A' group

B. one parent is homozygous for 'A' and another parent is homozygous for 'B'

C. one parent is heterozygous for 'A' and another parent is heterozygous for 'B'

D. both parents are homozygous for 'B'  
group

**Answer:**



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**51. Mutations can be induced with**

A. IAA

B. ethylene

C. gamma radiations

D. infrared radiations

**Answer:**



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**52.** The process of transformation was discovered by

A. Meselson and Stahl

B. Hershey and Chase

C. Griffith

## D. Watson and Crick

**Answer:**



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**53.** Which enzyme/s will be produced in a cell in which there is a non - sense mutation in the lac y gene?

A.  $\beta$  - galactosidase`

B. Lactose permease



C. Transacetylase

D. Lactose permease and transacetylase

**Answer:**



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**54.** Which one of the following statements is not correct during protein synthesis?

A. UAA codon codes for lysine

B. UGG codon codes for tryptophan

C. Cysteine is coded by UGU and UGC codons

D. Tyrosine is coded by UAU and UAC codons

**Answer:**



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**55.** Removal of RNA polymerase III nucleoplasm will affect the synthesis of

A. tRNA

B. hnRNA

C. mRNA

D. rRNA

**Answer:**



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**56.** Which one of the following are analogous structures?

- A. Wings of bat and wings of pigeon
- B. Gills of prawn and lungs of man
- C. Thorns of Bougainvillea and tendrils of Cucurbita
- D. Flippers of dolphin and legs of horse

**Answer:**



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57. Which one among the following is an example for homology?

A. Eye of Octopus and mammals

B. Tuber of sweet potato and potato

C. Wings of butterfly and birds

D. Thorn and tendrils of Bougainvillea and Cucurbita

**Answer:**



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58. Which one of the following acts as a physiological barrier to the entry of micro organisms in human body

A. Tears

B. Monocytes

C. skin

D. Epithelium of urogenital tract

**Answer:**



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59. To obtain virus- free healthy plants from a diseased one by tissue culture technique , which part / parts of the diseased plant will be taken:

- A. Apical meristem
- B. Palisade meristem
- C. Both apical and axillary meristems
- D. Epidermis only

**Answer:**



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60. In plant breeding programmes, the entire collection (of plants / seeds) having all the diverse alleles for all genes in a given crop is called

- A. a cross hybridisation among the selected parents
- B. evaluation and selection of parents
- C. germplasm collection



D. selection of superior recombinants

**Answer:**



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**61.** Which one of the following options gives the correct matching of a disease with its

causative organism and mode of infection?

| Disease               | Causative Organisms                | Mode of Infection                          |
|-----------------------|------------------------------------|--|
| 1) Eleph-<br>antiasis | Wuchereria<br>bancrofti            | With infe-<br>cted water<br>and food       |
| 2) Malaria            | Plasmo-<br>dium vivax              | Bite of<br>male ano-<br>pheles<br>mosquito |
| 3) Typhoid            | Salmonella<br>typhi                | With insp-<br>ired air                     |
| 4) Pneu-<br>monia     | Streptoco-<br>ccus pneu-<br>moniae | Droplet<br>infection                       |



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62. *Monascus purpureus* is a yeast used commercially in the production of

A. ethanol

B. streptokinase for removing clots from the blood vessels

C. citric acid

D. blood cholesterol lowering statins

**Answer:**



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**63.** In paddy fields biological nitrogen - fixation is chiefly brought by

A. cyanobacteria

B. green algae

C. mycorrhiza

D. Rhizobium

**Answer:**



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64. In gobar gas, the maximum amount is that of

A. butane

B. methane

C. propane

D. carbon dioxide

**Answer:**



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65. DNA fragments generated by the restriction endonucleases in a chemical reaction can be separated by

- A. centrifugation
- B. polymerase chain reaction
- C. electrophoresis
- D. restriction mapping

**Answer:**



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66. Cosmid is

A. extra genetic material in mycoplasma

B. circular DNA in bacteria

C. extra DNA in bacteria

D. fragment of DNA inserted in bacteria for  
forming copies

**Answer:**



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67. The first human hormone produced by recombinant DNA technology is

- A. insulin
- B. oestrogen
- C. thyroxine
- D. progesterone

**Answer:**



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**68.** What is it that forms the basis of DNA fingerprinting?

- A. The relative proportions of purines and pyrimidines in DNA
- B. The relative difference in the DNA occurrence in blood, skin and saliva
- C. The relative amount of DNA in the ridges and grooves of the fingerprints

D. Satellite DNA occurring as highly repeated short DNA segments

**Answer:**



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**69.** Genetic engineering has been successfully used for producing

A. transgenic mice for testing for safety of testing polio vaccine before use in

humans

B. transgenic models for studying new

treatments for certain cardiac diseases

C. transgenic cow - Rosie which produces

high fat milk for making ghee

D. animals like bulls for farm work as they

have super power

**Answer:**



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70. Which one of the following is most appropriately defined?

A. Host is an organism which provides food to another organism

B. Amensalism is a relationship in which one species is benefitted and the other is unaffected

C. Predator is an organism that catches and kills other organism for food

D. Parasite is an organism which always lives inside the body of other organism and may kill it

**Answer:**



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71. Secondary productivity is rate of formation of new organic matter by

A. producer

B. parasite

C. consumer

D. decomposer

**Answer:**



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**72.** Which one of the following is not a gaseous biogeochemical cycle in ecosystem?

A. Sulphur cycle

B. Phosphorus cycle

C. Nitrogen cycle

D. carbon cycle

**Answer:**



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**73.** The second stage of hydrosere is occupied by plants like

A. Azolla

B. Typha

C. Salix

D. Vallisneria

**Answer:**



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**74.** Which one of the following is not used for exsitu plant conservation?

A. Seeds banks



B. Shifting cultivation

C. Botanical gardens

D. Field gene banks

**Answer:**



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**75.** Which one of the following is exotic species

A. Parthenium

B. Lantana

C. Eichhornia

D. All of these

**Answer:**



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**76.** IUCN stands for

A. Indian Union for Conservation of Nature

B. International Union for Conservation of  
Nature and Natural Resources

C. Indian Union for Chemical Nomenclature

D. International Union for Conservation of  
Nutrients

**Answer:**



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## 77. Measuring Biochemical Oxygen Demand

(BOD) is a method used for

- A. estimating the amount of organic matter in sewage water
- B. working out the efficiency of oil driven automobile engines
- C. measuring the activity of *saccharomyces cerevisiae* in producing curd on a commercial scale

D. working out the efficiency of RBCs about their capacity to carry oxygen

**Answer:**



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**78.** Peripatus is a connecting link between :

A. Annelida and Mollusca

B. Mollusca and Arthropoda

C. Annelida and Arthropoda

## D. Coelentrata and Annelida

**Answer:**



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**79. ANF causes**

- A. Vasodilation and increased B.P
- B. Vasoconstriction
- C. Vasodilation and decreased BP
- D. Reduced BP. only

**Answer:**



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**80.** Cuscuta is an example of \_\_\_\_\_

- A. Endoparasitism
- B. Hemiparasitism
- C. Total ectoparasitism
- D. Partial ectoparasitism

**Answer:**



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81. Germ pore's function is

A. Release of male gamete

B. Absorption of water for seed-germination

C. formation of radicle

D. *f or mation / ∈ itiation* of pollen tube



**Answer:**



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**82.** Match list I with list II and select the correct answer using the codes given below the lists:

**List I**

**List II**

- |                     |                             |
|---------------------|-----------------------------|
| <b>A. Chorion</b>   | <b>1. Nourishment</b>       |
| <b>B. Allantois</b> | <b>2. Protection</b>        |
| <b>C. Yolk sac</b>  | <b>3. Fluid environment</b> |
| <b>D. Amnion</b>    | <b>4. Excretion</b>         |

**Codes**

**A B C D**

A. 4213

B. 2413

C. 2431

D. 1324

**Answer:**



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**83.** Down's syndrome is a case of \_\_\_\_\_

A. Decrease in 18th pair of autosomes

B. Increase in 18th pair of autosomes

C. Increase in 21st pair of autosomes

D. Increase in 13th pair of autosomes

**Answer:**



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**84.** The main plant body is sporophyte with flowers tap root, stem, and leaves in

A. Pteridophytes

B. Gymnosperms

C. Angiosperms

D. Non-vascular amphibians of plant  
kingdom

**Answer:**



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85. Find correct match:

| column I        | Column II                      |
|-----------------|--------------------------------|
| A. Cytoskeleton | I. 9+2 array                   |
| B. Axoneme      | II. Maintenance of cell shape  |
| C. Nucleolus    | III. Oxidative phosphorylation |
| D. Mitochondria | IV. Active r-RNA synthesis     |

Codes

A B C D

A. *IIIVIII*

B. *IIIIIIIV*

C. *IIIVIII*

D. *IIIIIIIV*

**Answer:**



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**86.** The plant growth regulator which causes fruit like apple to elongate and also improve its shape is

A. Ethylene

B. Abscisic Acid

C. Gibberellins

D. Cytokinin

**Answer:**



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**87.** In human, the ovum is first released from the ovary into

A. Body cavity

B. Isthmus part

C. Fimbriae of oviduct

D. Ampulla part

**Answer:**



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**88.** Elbow joint is an example of

A. Pivot joint

B. Hinge joint

C. Gliding joint



D. Ball and socket joint

**Answer:**



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**89.** Genetic material found in human Immunodeficiency virus is

A. ds DNA

B. ss DNA

C. ds RNA

D. ss RNA

**Answer:**



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**90.** Which one of these stimulates spermatogenesis

A. LH

B. FSH

C. Testosterone

D. All of these

**Answer:**



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