

OBJECTIVE

NOTE: You have four choices for each objective type question as A , B , C and D . The choice which you think is correct, fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question.

QUESTION NO: 1

DJK-41-22

- 1 Which of the following is not endotherm ?
(A) Bird (B) Amphibians (C) Flying insects (D) Mammals
- 2 Brain is protected by.
(A) Cranium (B) Skull (C) Orbits (D) All of the these
- 3 Muscle fatigue is caused by.
(A) CO₂ (B) Fumaric acid (C) Ethyl alcohol (D) Accumulation of lactic acid
- 4 Thyroid glands produce.
(A) Calcitonin (B) Tri-iodothyronine (C) T₃, T₄ and calcitonin (D) All A, B and C
- 5 Developing seeds are rich source of.
(A) Auxins (B) Cytokinin (C) Gibberellins (D) All A, B and C
- 6 Growth rate is influenced by.
(A) Hormones (B) Water (C) Vitamins (D) All A, B and C
- 7 Neurula is the stage in which embryo has.
(A) Neural tube (B) Blastocoels (C) Archenterons (D) Germinal layers
- 8 tRNA is synthesized by
(A) RNA polymerase-I (B) RNA polymerase-II (C) RNA polymerase-III (D) All A, B and C
- 9 Cell cycle is divided into.
(A) Interphase (B) Mitotic phase (C) Cytokinins (D) Both A and B
- 10 Microtubules which form mitotic apparatus are composed of.
(A) Tubulin (B) Troponin (C) Traces of RNA (D) Both A and B
- 11 Disputed paternity is determined now a days by.
(A) Blood type (B) PCR (C) DNA finger printing (D) Palindromic sequence
- 12 Which of the following is not a biotechnology product ?
(A) Vaccines (B) Modified enzymes (C) DNA probes (D) Hormones
- 13 Hot dry weather is well tolerated by.
(A) C₃ plants (B) C₄ plants (C) Angiosperms (D) Gymnosperms
- 14 Selection acts directly on
(A) Phenotype (B) Genotype (C) The entire genome (D) All A, B and C
- 15 The relationship of an organism to its environment is called
(A) Phycology (B) Ecology (C) Mycology (D) Biology
- 16 Tundra ecosystem located in Pakistan.
(A) Kara-Koram Mountain (B) Hindu Kush (C) Kohe-Suleman (D) Both A and B
- 17 Water is used in irrigation
(A) 10 % (B) 20 % (C) 90 % (D) Both A and B

SECTION-I

DJK-91-22

QUESTION NO. 2 Write short answers of any Eight (8) parts of the following 16

| | |
|------|---|
| i | How level of urea and metabolic wastes increases in human body ? |
| ii | How animals inhabitant of cold marine water maintain body heat ? Give examples. |
| iii | How temperature in fever is useful for human body ? |
| iv | What is cramp ? Give its two causes. |
| v | Define Disc-slip. |
| vi | Differentiate between ligament and tendon. |
| vii | Can we develop fruit without seed, How ? |
| viii | Differentiate between oviparous and viviparous animals by giving examples ? |
| ix | Differentiate weather from climate ? |
| x | Define zooplanktons and phytoplankton. |
| xi | What are environmental buffers ? Give their significance. |
| xii | Give any four adverse effects of Acid rain. |

QUESTION NO. 3 Write short answers of any Eight (8) parts of the following 16

| | |
|------|---|
| i | Differentiate between dendrites and axons. |
| ii | How Na ⁺ and K ⁺ ions show movement during transmission of nerve impulse. |
| iii | How epilepsy can be characterized and diagnosed ? |
| iv | State complete dominance. |
| v | What is over dominance ? |
| vi | How can blood pressure be proved as an example of multifactorial trait ? |
| vii | What are the requirements to produce a recombinant DNA ? |
| viii | What are palindromic sequences ? |
| ix | What is PCR ? |
| x | Define Niche. |
| xi | Interpret mycorrhiza as example of symbiosis. |
| xii | Define succession. Name its types. |

QUESTION NO. 4 Write short answers of any Six (6) parts of the following 12

| | |
|------|---|
| i | Appraise the effect of temperature on plant growth. |
| ii | Interpret apical dominance as a growth correlation. |
| iii | What is alkaptonuria ? Which enzyme is absent in these patients ? |
| iv | Give the role of RNA primer in DNA replication. |
| v | What is promoter ? Give the binding sites in the promoter of prokaryotes. |
| vi | Compare the benign and malignant tumors. |
| vii | What is synapses ? In which stage of prophase-I it takes place ? |
| viii | Briefly explain membrane invagination hypothesis. |
| ix | What are homologous organs ? Give example. |

SECTION-II

Note: Attempt any Three questions from this section

8 x 3 = 24

| | |
|---------|---|
| Q.5.(A) | Write a note on osmoregulation in marine animals. |
| (B) | Define ecosystem. Explain its various components. |
| Q.6.(A) | Compare locomotion in amphibians with locomotion in reptiles. |
| (B) | Discuss how DNA encodes protein structure with reference to the central dogma of molecular biology ? |
| Q.7.(A) | How is adrenal cortex important in the human body ? What abnormalities may arise if too much cortical hormones are produced and even the cortex is destroyed ? |
| (B) | Write a note on acid rain. |
| Q.8.(A) | Sketch the life cycle of Angiospermic plant ? |
| (B) | Discuss the genetics of colour blindness ? |
| Q.9.(A) | Write a note on conditions of growth in plants. |
| (B) | Differentiate animals possess organs with similar structure but with different functions and with different structures with similar functions. How does this supports the theory of evolution ? |

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QUESTION NO. 1

DJK-G-2-22

- 1 Secretion of Antidiuretic hormone is inhibited when body fluids are.
(A) Isotonic (B) Hypertonic (C) Hypotonic (D) None of these
- 2 Unstriated muscles are.
(A) Smooth muscles (B) Cardiac muscles (C) Skeletal muscles (D) Brachialis
- 3 Thin filament is composed chiefly of.
(A) Tropomyosin (B) Troponin (C) Actin (D) All of these
- 4 The receptors for neurotransmitter molecules are found in.
(A) Neurolemma (B) Sarcolemma (C) Presynaptic membrane (D) Postsynaptic membrane
- 5 The secretion of FSH is inhibited.
(A) Estrogen (B) Progesterone (C) LH (D) ADH
- 6 The discoidal cap of cells above the blastocoels is called.
(A) Ectoderm (B) Endoderm (C) Mesoderm (D) Blastoderm
- 7 Which one of the following is the internal factor of growth in plants ?
(A) CO₂ (B) oxygen (C) Nutrition (D) Hormones
- 8 It is responsible for correct initiation of transcription.
(A) Initiation factor (B) Sigma factor (C) Elongation factor (D) Transcription factor
- 9 The contraction of spindles occur during.
(A) Anaphase (B) Anaphase-I (C) Metaphase (D) Both A and B
- 10 Synapsis takes place in.
(A) Leptotene (B) Pachytene (C) Zygotene (D) Diplotene
- 11 What is the risk of a colour blind child in a family, when father is colour blind but mother is normal?
(A) 0 % (B) 25 % (C) 50 % (D) 100 %
- 12 The fragments of DNA can be separated according to lengths by.
(A) PCR amplification (B) Gel electrophoresis (C) Recombinant DNA technology (D) Gene Cloning
- 13 Transgenic plants are produced when foreign genes are introduced into.
(A) Plant protoplast (B) Immature plant embryo (C) Roots (D) Both A and A
- 14 Vermiform appendix in man is.
(A) Developed organ (B) Vestigial organ (C) Rudimentary organ (D) Imperfect organ
- 15 Pick the biotic component from the following.
(A) Soil (B) Atmosphere (C) Water (D) Animals
- 16 Phytoplanktons are drifting.
(A) Plants (B) Animals (C) Protozoans (D) Insects
- 17 The cheapest and non – pollutant source of energy is.
(A) Hydroelectric power (B) Wind Power (C) Fossil fuels (D) Nuclear power

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