

Time: 20 Minutes

OBJECTIVE Code: 8468

445-42-21 Marks: 17

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. Attempt as many questions as given in objective type question paper and leave others blank.

1. The most common chronic arthritis which is a degenerative joint disease, also caused by
 (A) hormonal defects (B) ☒ genetic defects (C) nutritional defects (D) neural defects
2. Chromosomes appear inside the nucleus at the time of
 (A) cell elongation (B) cell maturation (C) cell differentiation (D) ☒ cell division
3. Genomic fragments can be separated according to their lengths during
 (A) PCR (B) gene cloning (C) ☒ gel electrophoresis (D) chemical cleavage
4. Who defined "Niche" as species occupation?
 (A) Grinnell (B) ☒ Charles Elton (C) Cuvier (D) Haeckel
5. Establishing new forests where no forests existed before
 (A) desertification (B) deforestation (C) reforestation (D) ☒ afforestation
6. Fruit ripening is often accompanied by a burst of respiratory activity called as
 (A) photoperiod (B) fertilization (C) ☒ climacteric (D) reproduction
7. Haemophilia 'C'
 (A) ☒ affects both sexes equally (B) affects men more than women
 (C) affects women more than men (D) is non-allelic sex linked recessive
8. The change in frequency of alleles at a locus that occurs by chance is
 (A) gene pool (B) mutations (C) ☒ genetic drift (D) migration
9. Synapsis takes place in
 (A) leptotene (B) ☒ zygotene (C) pachytene (D) diplotene
10. The beginning of bone formation, starts after injury
 (A) ☒ 3 - 4 weeks (B) 2 - 3 months (C) 8 weeks (D) 8 - 12 weeks
11. The nature of shivering thermogenesis adaptation is
 (A) structural (B) ☒ physiological (C) ☒ psychological (D) behavioral
12. Northern coniferous forests are called as
 (A) alpine (B) boreal (C) ☒ taiga (D) prairies
13. Multicellular alga, Acetabularia is attached to the ground by
 (A) roots (B) hold fast (C) ☒ rhizoid (D) base
14. Increased plasma level of urea is an indication of
 (A) ☒ renal failure (B) urinary tract infection
 (C) kidney stones (D) sexually transmitted disease
15. If a person has 44 autosomes and xyy, he will suffer from
 (A) ☒ klinefelter's syndrome (B) turner's syndrome
 (C) down's syndrome (D) mongolism
16. The most prominent structure found in 18 hrs chick embryo is
 (A) primitive streak (B) ☒ notochord (C) hensen's node (D) neurocoel
17. In mitochondria, the codon UGA signals for
 (A) stop (B) start (C) ☒ tryptophan (D) methionine

Time: 2:40 Hours

SUBJECTIVE

6

Note: Section I is compulsory. Attempt any THREE (3) questions from Section II.

(SECTION - I)

GUT-62-21

(2 x 8 = 16)

2. Write short answers to any EIGHT questions.

- Differentiate between hypotonic and hypertonic environments.
- Which nitrogenous wastes are produced by the metabolism of purine and pyrimidine?
- Differentiate between ureter and urethra.
- What are collenchyma cells?
- Write down any two major functions of the skeletal system.
- Write down a note on hematoma formation.
- Differentiate between oviparous and viviparous.
- Define gonorrhoea in detail.
- How temperate deciduous forests were affected by human impact?
- Write down a note on productivity.
- How forests play their role on climate?
- What are two main sources of water pollution?

3. Write short answers to any EIGHT questions.

- Give the commercial applications of gibberellins.
- What are effectors? Give their types.
- What is Parkinson's disease?
- Compare Allele with multiple alleles.
- What is product rule?
- Differentiate between sex chromosomes and autosomes.
- What are transgenic plants?
- What is cystic fibrosis?
- What is gene sequencing?
- Differentiate between Biomes and Biosphere.
- What are producers and consumers?
- What is commensalism?

(2 x 8 = 16)

4. Write short answers to any SIX questions.

- Differentiate between maturation and differentiation.
- Define growth correlations.
- Differentiate between heterochromatin and euchromatin.
- What are okazaki fragments?
- Differentiate between nucleotides and nucleosides.
- Explain briefly prophase in mitosis.
- How malignant tumor or cancer is caused?
- Differentiate between homologous organs and analogous organs.
- What is theory of special creation?

(2 x 6 = 12)

(SECTION - II)

- (a) Describe osmoregulation in the animals of marine environment.
(b) Describe the biotic components of an ecosystem.
- (a) Describe major functions of human skeletal system.
(b) Explain Meselson - Stahl experiment for DNA replication.
- (a) Describe the functions of abscisic acid as growth hormone in plants.
(b) Write down a note on ozone layer and ozone layer depletion.
- (a) Write down a note on identical twins and fraternal twins.
(b) Discuss diabetes mellitus and its genetic basis.
- (a) What are growth correlations?
(b) Write down the contributions of Darwin in evolution.

4
4
4
4
4
4
4
4
4

6