

Federal Board HSSC-II 2016

BIOLOGY (Revised Syllabus)

SECTION-A (Marks 17)

Time allowed: 25 Minutes

NOTE: - Section-A is compulsory. All parts of this section are to be answered on the question paper itself. It should be completed in the first 20 minutes and handed over to the Centre Superintendent. Deleting/overwriting is not allowed. Do not use lead pencil.

- Q.1 Circle the correct option i.e. A/B/C/D. Each part carries one mark.**
- (i) In Pakistan temperate moist conditions are found in:
A. Southern Punjab
B. Karachi
C. Swat
D. Shogran
- (ii) Bilirubin is the break down product of:
A. Purine bases B. Myoglobin
C. Nucleic Acid D. Haemoglobin
- (iii) Which hormone is secreted when the level of calcium increases in blood?
A. Cortisone B. Thyroxine
C. Parathormone D. Calcitonin
- (iv) Which among the following is a short-day plant?
A. Cucumber B. Tomato
C. Strawberry D. Cabbage
- (v) Which is NOT concerned with Arthritis?
A. Haematoma B. Inflammation
C. Degeneration D. Stiffness
- (vi) During development of chick embryo the hypoblast formed in process of gastrulation is presumptive layer for:
A. Yolk sac B. Ectoderm
C. Endoderm D. Mesoderm
- (vii) Nucleosome in chromosome appear like beads in a string. Each nucleosome is made up of _____ nucleotides.
A. 1000 B. 150
C. 200 D. 250
- (viii) Which is the result of autosomal non-disjunction?
A. Jacob's Syndrome
B. Down's Syndrome
C. Klinefelter's Syndrome
D. Turner's Syndrome
- (ix) Mendel laid the foundation stone of classical genetics by formulating two laws of inheritance. His work was published in:
A. 1866 AD B. 1854 AD
C. 1860 AD D. 1865 AD
- (x) The cause of sickle cell anaemia was discovered by:
A. Archibald Garrod
B. F-Sanger
C. Vernon-Ingram
D. Beadle and Tatum
- (xi) If both mother and father are A and B heterozygous blood groups, then their children can be with blood types:
A. All of the four blood groups
B. AB group only
C. A and B groups only
D. AB and O groups only
- (xii) MODY (Maturity Onset Diabetes of Young) is caused due to the absence of:
A. Glucokinase B. Isomerase
C. Lipase D. Aldolase
- (xiii) The plasmid PSC 101 contains antibiotic resistant gene for:
A. Sulphonamide B. Ampicillin
C. Tetracycline D. Penicillin
- (xiv) In a population that is at a Hardy-Weinberg equilibrium 25% of the individuals show the recessive traits. What is the frequency of the dominant allele in the population?
A. 0.25 B. 0.70
C. 0.50 D. 0.75
- (xv) The average annual rainfall in temperate deciduous forest is:
A. 750-1500 mm B. 500 mm
C. 750 mm D. 500-1000 mm
- (xvi) The term totipotent for plant cell was first coined by:
A. F.C. Steward
B. William Bateson
C. Garrod
D. Gottlieb Haberlandt
- (xvii) The total available Fresh Water in the form of lakes, streams and rivers on the earth is:
A. 1% B. 5%
C. 10% D. 2%

SECTION - B (Marks 42)

- Q.2 Answer any FOURTEEN parts. The answer to each part should not exceed 3 to 4 lines. (14×3=42)**
- (i) Define the following
a. Lithotripsy
b. Plumage Fluffing
c. Pyrogen
- (ii) Write down the function of the hormones
a. Thyroxine b. Estrogen
c. Oxytocin
- (iii) Name the bones of human cranium.
- (iv) Define the following
a. Parthenocarpy b. Follicle atresia
c. Menopause
- (v) Define the following:
a. Embryonic induction
b. Teratology
c. Discoidal cleavage
- (vi) Write a brief note on Nucleosome
- (vii) Write the important features of DNA Polymerase III.
- (viii) Write a brief note on Malignant tumor.
- (ix) Define the following:
a. Epistasis b. Pieiotropy
c. Linkage
- (x) Write a brief note on Molecular carrier.
- (xi) What is endosymbiont hypothesis? How does it help in evolution of Eukaryotic cell?
- (xii) Define the following:
a. Niche b. Habitat
c. Biome
- (xiii) Name three plants of temperate deciduous forests
- (xiv) What is Predation? Write its significance in ecosystem
- (xv) What is geothermal energy? Why it is not feasible?
- (xvi) Define the following:
a. Climate b. Weather
c. Succession
- (xvii) What is Food-Web? Draw Food Web.
- (xviii) Write names of excretory organs of the following animals
a. Planaria b. Earthworm
c. Cockroach
- (xix) Write a brief note on Sciatca

SECTION-C (Marks 26)

Note: Attempt any TWO questions. All questions carry equal marks. (2×13=26)

- Q. 3 a.** Describe the structure of Nephron and draw its labeled, neat diagram. (05)
b. What is sliding filament model of muscle contraction? Show diagrammatically both the relaxed and contracted muscle. (04)
c. Write role of secretions of posterior lobe of pituitary gland. (04)
- Q. 4 a.** What is the replication? Describe the process of replication of DNA. (09)
b. What is Genomic library? How is it constructed? (04)
- Q. 5** What is biogeo-chemical cycle? Describe nitrogen cycle. (9+4)