

Sargodha Board-2024-G-1

Warning:- Please, do not write anything on this question paper except your Roll No.

1224 (Inter Part – II)

(Session 2020-22 to 2022-24)

Roll No-----

Biology (Objective)

Paper (II)

Group I

Sig. of Student -----

Time Allowed:- 20 minutes

PAPER CODE 4461

Maximum 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. Write **PAPER CODE**, which is printed on this question paper, on the both sides of the Answer Sheet and fill bubbles accordingly, otherwise the student will be responsible for the situation. Use of Ink Remover or white correcting fluid is not allowed.

Q.1



1. Bilirubin is a metabolic waste formed as a result of _____ breakdown.
(A) Nucliec acids (B) Hemoglobin ● (C) Purine bases (D) Creatinine
2. Tetanus is caused by _____
(A) Low Blood Ca^{+2} level (B) Virus (C) Protozoa (D) Bacteria ●
3. Slightly elastic connective tissue that holds the Bones together is called.
(A) Ligament ● (B) Z-lines (C) Cross bridges (D) Tendon
4. The form of learning that involves diminution in response as a result of repeated stimuli.
(A) Imprinting (B) Latent learning (C) Insight learning (D) Habituation. ●
5. Plants become etiolated when grown without
(A) Light ● (B) Water (C) Soil (D) Air
6. Which one of these hormone is not related to ovarian cycle?
(A) LH (B) Estrogen (C) Oxytocin ● (D) Progesterone
7. During ascidian development, gut is formed by _____ cytoplasm.
(A) Gray vegetal ● (B) Clear (C) Yellow (D) Gray aquatorial
8. Chromosomes were discovered by _____ in 1882.
(A) Walther flemming ● (B) W. Sutton (C) Ervin Charagaff (D) Rosalind Franklin
9. In Okazaki fragments range from 1000-2000 nucleotides
(A) Bacteria ● (B) Viruses (C) Prions (D) Human
10. In human cell cycle, _____ takes the least time to complete.
(A) M-Phase ● (B) G_2 -Phase (C) S-Phase (D) G_1 -Phase
11. Red color blindness is also known as
(A) Tritanopia (B) Protanopia ● (C) Deutanopia (D) Tetranopia
12. Recombinant DNA is introduced into the host cell by means of a
(A) Bacterium (B) Fungus (C) Vector ● (D) Fruitfly
13. Antithrombin-III is biotechnological product produced in
(A) Goats ● (B) Cow (C) Mice (D) Bacteria
14. Which one of these is the ultimate source of all changes.
(A) Migration (B) Non-random mating (C) Mutation ● (D) Genetic drift
15. Third stage of xerosere is known as
(A) Moss stage ● (B) Shrub stage (C) Crustose lichen stage (D) Herb stage
16. Macaca mulatta is biological name of
(A) Black bear (B) Tiger (C) Rhesus monkey ● (D) Leopard cat
17. Which one of these is non-renewable source of energy on earth?
(A) Wind (B) Geothermal (C) Fossil fuels ● (D) Sun

1237 -- 1224 -- 7500 (1)

Warning:- Please, do not write anything on this question paper except your Roll No.

1224 (Inter Part-II)

Sargodha Board-2024-G-1

(Session 2020-22 to 2022-24)

Biology (Subjective)

(Group I)

Paper (II)

Time Allowed: 2.40 hours

Section ----- I

Maximum Marks: 68

2. Answer briefly any Eight parts from the followings:-

8 × 2 = 16

- (i) On a cool day a human's temperature may be several degrees lower in arms and legs as compared to trunk, why?
- (ii) Write structural formula of Urea and Uric Acid. (iii) Is liver a major homeostatic organ? Justify in few lines.
- (iv) Why calcium ions are basic requirement for muscle contraction?
- (v) How is turgor pressure built in a plant cell?
- (vi) What do you understand by antagonistic arrangement of muscles? Give example.
- (vii) How is reproduction significant for the survival of a species?
- (viii) Suggest a remedy for the parents which are unable to enjoy normal process of fertilization and birth.
- (ix) What do you understand by the productivity of an aquatic ecosystem?
- (x) What was the reason of desertification in Sahel at southern edge of Sahara desert?
- (xi) How can we minimize the effects of energy shortage?
- (xii) What do you understand by the term "Global warming"?

3. Answer briefly any Eight parts from the followings:-

8 × 2 = 16

- (i) Describe the structure of spinal cord. (ii) Differentiate between somatic and autonomic nervous system.
- (iii) Give some differences between etiolation chlorosis.
- (iv) What happens when a human is given wrong blood transfusion?
- (v) What pattern of sex-determination is found in grasshopper? Elaborate.
- (vi) Describe sexual dimorphism in drosophila. (vii) Is it possible to extract metals from low graded ores using Biotechnology? How?
- (viii) How a suspected rapist can be identified? (ix) What are molecular scissors? Give examples
- (x) What is commensalism? Give example. (xi) What is denitrification? Write its impact.
- (xii) Differentiate between habitat and niche.

4. Answer briefly any Six parts from the followings:-

6 × 2 = 12

- (i) How is a blastula formed in a developing chick embryo?
- (ii) Define Teratology. Enlist any two causes of abnormal development.
- (iii) What will happen to replication of DNA, if primase is not present.
- (iv) Where codon and anticodon are situated. (v) How is translation terminated?
- (vi) How do Karyokinesis and cytokinesis phases of cell division differ?
- (vii) Enlist four important functions of Mitosis. (viii) What is genetic drift? How does it affects gene frequency?
- (ix) How artificial selection is different from natural selection.

Section ----- II

Note: Attempt any three questions.

(8 × 3 = 24)

- 5. (a) What are Nephrons? Explain with the help of labelled diagram?
(b) Explain various stages of Prophase I.
- 6. (a) Define tropic movements. Explain its different types.
(b) How energy flows in Food Chain of an ecosystem.
- 7. (a) What is feed back mechanism? Explain with the help of an example.
(b) Define and explain Hardy Weinberg theorem.
- 8. (a) Explain in detail the process of birth in human female.
(b) What are sex-chromosomes? Discuss the chromosomal patterns of sex determination in animals.
- 9. (a) Define meristems? Discuss their various types?
(b) What is gene therapy, Give its types and Explain in which disease ex-vivo-gene therapy is needed?

1238 -- 1224 -- 7500

Warning:- Please, do not write anything on this question paper except your Roll No.

1224. (Inter Part – II)

(Session 2020-22 to 2022-24)

Roll No.-----

Biology (Objective) (Group 2nd)

Paper (II)

Sig. of Student -----

Time Allowed:- 20 minutes

PAPER CODE 4466

Maximum 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. Write **PAPER CODE**, which is printed on this question paper, on the both sides of the Answer Sheet and fill bubbles accordingly, otherwise the student will be responsible for the situation. Use of Ink Remover or white correcting fluid is not allowed.

Q.1

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1. In which zone of Lake ecosystem, light does not penetrate? up to the bottom.
 (A) Littoral Zone (B) Limnetic Zone (C) Both Littoral and Limnetic (D) Profundal Zone ●
2. The natural heat energy trapped under ground is called
 (A) Geothermal energy (B) Fossil fuels (C) Nuclear energy (D) Tidal Power ●
3. An animal living in fresh water is more likely to excrete its waste nitrogen in the form of
 (A) Ammonia (B) Urea (C) Uric Acid (D) Creatinine ●
4. Locomotory structures found in star fish are
 (A) Setae (B) Tube feet (C) Foot (D) Wings ●
5. Presence of irregular stripes is the character of which type of Muscles?
 (A) Smooth (B) Skeletal (C) Cardiac (D) Both 'B' and 'C' ●
6. Which growth hormone can be sprayed on the tree crops to regulate fruit drop at the end of the season?
 (A) Auxins (B) Absciscic Acid (C) Ethene (D) Cytokinins ●
7. An individual has exophthalmic goiter and abnormally high basal metabolic rate, is more likely to be suffering from
 (A) Low thyroxine production (B) Excessive thyroxine (C) Cretinism (D) Myxedema ●
8. Which hormones are secreted by Mammalian Placenta?
 (A) Estrogen and Prolactin (B) Progesterone and Lactogen (C) Progesterone and oxytocin (D) Estrogen and oxytocin ●
9. In which phase of Animal development migration and rearrangement of cells occur to form three germ layers.
 (A) Gastrulation (B) Cleavage (C) Organogenesis (D) Growth ●
10. What is the role of enzyme DNA ligase during DNA replication?
 (A) Synthesis of primer (B) Recognition of the primer (C) Attachment of okazaki fragments (D) Proof reading ●
11. Enzyme Amino acyl tRNA synthetase has an important role during Translation.
 (A) Binding of a specific amino acid to a particular tRNA (B) Formation of initiation complex (C) Elongation of polypeptide chain (D) Termination of translation ●
12. Which phase of mitosis ensures equal distribution of chromosomes in the daughter cells?
 (A) Prophase (B) Metaphase (C) Anaphase (D) Telophase ●
13. A colour blind man is married to normal female, what is the risk of colour blind child in this family?
 (A) 50% (B) 25% (C) Zero% (D) 100% ●
14. During DNA finger printing, unique collection of various sized DNA fragments, can be obtained by
 (A) Treating genome with restriction enzymes (B) Gel electrophoresis (C) Treating with Probes (D) Denaturing DNA by heat ●
15. In Recombinant DNA technology, Bacterial cells can be made more permeable for recombinant plasmids after treating with
 (A) Sodium chloride (B) Calcium chloride (C) Potassium Chloride (D) Magnesium Chloride ●
16. One of the following is not related to Darwinism.
 (A) Inheritance of acquired characters (B) Over production (C) Struggle for survival (D) Survival of fittest ●
17. The relationship between insects and flowering plants, is an example of
 (A) Commensalism (B) Parasitism (C) Mutualism (D) Predation ●

1239 -- 1224 -- 7500 (3)

Sargodha Board-2024-G-2

Warning:- Please, do not write anything on this question paper except your Roll No.

1224(Inter Part-II)

(Session 2020-22 to 2022-24)

Biology (Subjective)

(Group 2nd)

Paper (II)

Time Allowed: 2.40 hours

Maximum Marks: 68

Section ----- I

2. Answer briefly any Eight parts from the followings:-

8 × 2 = 16

- (i) How plants of cold regions respond to freezing temperatures? (ii) What is shivering thermogenesis?
- (iii) Differentiate vasodilation from vasoconstriction. (iv) What are ungulate animals?
- (v) How locomotion occurs in snail? (vi) Define muscle fatigue.
- (vii) Give importance of seed dormancy. (viii) What are viviparous mammals? Give one example.
- (ix) What are acid rains? Give two disadvantages of acid rains. (x) What is algal bloom?
- (xi) Write down the importance of grassland ecosystem.
- (xii) Where Tundra ecosystem exists in Pakistan?

3. Answer briefly any Eight parts from the followings:-

8 × 2 = 16

- (i) Differentiate between etiolation and chlorosis?
- (ii) Write the distribution of pain and cold receptors on animal body?
- (iii) Give the two commercial uses of Gibberellins? (iv) What is test cross? Also write its significance?
- (v) Define pleiotropy? Give its two examples? (vi) Differentiate between gene linkage and linkage group?
- (vii) Write two uses of PCR amplification and Analysis?
- (viii) What are restriction endonucleases? Give their function?
- (ix) Give the biotechnological uses of bacteria in mining? (x) Define climax community with example?
- (xi) Differentiate between ectoparasite and endoparasite. (xii) Discuss the role of decomposers in ecosystem?

4. Answer briefly any Six parts from the followings:-

6 × 2 = 12

- (i) Define growth and embryonic development.
- (ii) Write the role of clear and yellow cytoplasm in development.
- (iii) What are Okazaki fragments? In which strand they are formed?
- (iv) Name the single ring nitrogen bases, also draw it.
- (v) Name transforming principle, also define term transformation.
- (vi) Name Trisomic Sexual non-disjunction in your Text book, Give two symptoms.
- (vii) Why and how chromosome number is halved by Meiosis. (viii) What are Analogous organs, Give one example?
- (ix) Write two preventive measures to save endangered species.

Section ----- II

Note: Attempt any three questions.

(8 × 3 = 24)

- 5.(a) Describe the structure of nephron with labeled diagram.
- (b) Write a detailed note on cancer.
- 6.(a) How does healing process proceed when a bone is broken in an accident?
- (b) Define succession. Explain all stages of Xerosere.
- 7.(a) Explain factors which affect gene frequency.
- (b) Describe the endocrine and neural functions of hypothalamus. (two each)
- 8.(a) What structures are associated with human female reproductive system. Also write their function.
- (b) State Law of Segregation prove it with one suitable example.
- 9.(a) How would you describe the process of growth correlations in plants?
- (b) What is the methodology used for expression of Recombinant DNA?

1240 -- 1224 -- 7500

Sargodha Board-2023

1123 Warning:- Please write your Roll No. in the space provided and sign. Roll No-----
(Inter Part – I) (Session 2019-21 to 2022-24) Sig. of Student -----

Biology (Objective)

Group 1

Paper (I)

Time Allowed:- 20 minutes

PAPER CODE 2463

Maximum 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. Write **PAPER CODE**, which is printed on this question paper, on the both sides of the Answer Sheet and fill bubbles accordingly, otherwise the student will be responsible for the situation. Use of Ink Remover or white correcting fluid is not allowed.

Q. 1



- 1) Bacteria divide at exponential rate during the phase:
(A) Decline (B) Stationary (C) Log (D) Lag
- 2) Cenozoic is the era of:-
(A) Fishes (B) Amphibians (C) Reptiles (D) Mammals
- 3) In animals fatty acids are:
(A) Branched Chain (B) Straight Chain (C) Ringed Chain (D) Ringed and branched Chain
- 4) Which one is essential material for co-enzyme:
(A) Vitamins (B) Lipids (C) Proteins (D) Carbohydrates
- 5) Omnis cellula-e-cellula was hypothesized by:
(A) Weismann (B) Oken (C) Virchow (D) Lamarck
- 6) About 60% of Adults are immune to disease:
(A) Measles (B) Mumps (C) Influenza (D) Polio
- 7) Algae which take part in building coral reefs along with coral animals are:
(A) Green algae (B) Brown algae (C) Red algae (D) Blue green algae
- 8) The protective membrane of human heart is:
(A) Epicardium (B) Endocardium (C) Myocardium (D) Pericardium
- 9) Citric acid is obtained from the species of:
(A) Penicillium (B) Aspergillus (C) Saccharomyces (D) Neurospora
- 10) The ovule of the angiosperm can be called:
(A) An integumented megasporangium (B) Megasporangium (C) Microsporangium (D) Mega gametangium
- 11) The larva of echinoderms is called:
(A) Planaria (B) Bipinnaria (C) Valiger (D) Trochophore
- 12) Mammals had evolved from reptilian ancestor:
(A) Brontosaurus (B) Ichthyosaurus (C) Cotylosaurs (D) Varanope
- 13) During photorespiration glycine is converted into serine in organelle
(A) Peroxisome (B) Ribosomes (C) Chloroplast (D) Mitochondria
- 14) Chlorophyll do not reflect:
(A) Green wavelength (B) Blue wavelength (C) Indigo wavelength (D) Yellow wavelength
- 15) During Krebs's cycle succinate is converted into:
(A) Fumarate (B) Malate (C) Oxaloacetate (D) Citrate
- 16) The volume of blood in a body weight of 60 kgs is:
(A) 8 litres (B) 7 litres (C) 6 litres (D) 5 litres
- 17) Sarracenia pupurea is a scientific name of:
(A) Pitcher Plant (B) Venus fly trap (C) Sundew (D) Leguminous plant

1129 -- 1123 -- 11000 (2)

2. Answer briefly any Eight parts from the followings:-

8 × 2 = 16

- (i) Write down structural Formula of Butyric acid.
- (ii) What is the role of metal ions with enzymes?
- (iii) How substrate concentration affect the rate of enzyme action?
- (iv) Differentiate irreversible inhibitors from reversible inhibitors.
- (v) Define mycorrhiza along with its kinds.
- (vi) How biologists classify fungi imperfecti now a days?
- (vii) What is the difference between ostia and osculum?
- (viii) What is unique in the female of Eagle?
- (ix) Which group is considered as first amniotic group give two characters of them?
- (x) Write down two basic characters of chordates.
- (xi) Define chemiosmosis.
- (xii) How Rubisco is regenerated?



3. Answer briefly any Eight parts from the followings:-

8 × 2 = 16

- (i) Biological organization is not simple. Comment on it.
- (ii) How essentiality of a certain nutrient for plant is checked in complex medium of soil.
- (iii) How the material of cell is recycled and renewed by Lysosomes?
- (iv) How magnification of microscope is determined?
- (v) Kingdom Protista is called Kingdom of exclusion. Why?
- (vi) How chalk is formed?
- (vii) Algae differ from plants. Why?
- (viii) Green algae and plants form a monophyletic lineage. Comment it.
- (ix) How bryophytes are precisely defined.
- (x) What are paraphyses?
- (xi) Define apoplast pathway. Why it becomes discontinuous.
- (xii) What are hydathodes.

4. Answer briefly any Six parts from the followings:-

6 × 2 = 12

- (i) What are obligate intracellular parasites? Give their example?
- (ii) Differentiate b/w Trichome and filament?
- (iii) In what way fluid feeder feeds?
- (iv) How prey and predator interaction is helpful in maintaining the ecosystem?
- (v) How the crop differ from gizzard?
- (vi) Suggest various disadvantages of water for ventilation?
- (vii) Explain the process of exhalation and Inhalation?
- (viii) In what way pleura and diaphragm protect the lungs?
- (ix) What factors are involved in the transport of Respiratory Gases?

Section ----- II

Note: Attempt any three questions.

(8 × 3 = 24)

5. (a) Define Phyletic Lineage, explain its importance.
(b) Discuss various factors that affect the rate of Transpiration.
6. (a) Differentiate between DNA and RNA .
(b) Give different modes of asexual reproduction in fungi.
7. (a) Explain the Nutrition in Bacteria.
(b) Why bryophytes are called ' Amphibious plants'? Discuss their general characteristics.
8. (a) Write down biological classification of Corn?
(b) Draw outline of Krebs cycle.
9. (a) Describe at least four main differences between Prokaryotic cell & Eukaryotic cell.
(b) Describe parasitic & symbiotic nutrition in plants.

1123 Warning:- Please write your Roll No. in the space provided and sign. Roll No-
(Inter Part – I) (Session 2019-21 to 2022-24) Sig. of Student -----

Biology (Objective)**(Group II)****Paper (I)****Time Allowed:- 20 minutes****PAPER CODE 2468****Maximum 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. Write **PAPER CODE**, which is printed on this question paper, on the both sides of the Answer Sheet and fill bubbles accordingly, otherwise the student will be responsible for the situation. Use of Ink Remover or white correcting fluid is not allowed.

Q. 1

- 1) An enzyme lowers down the energy of:
 (A) Potential (B) Kinetic (C) Ionic (D) Activation
- 2) Glyoxysomes are most abundant in:
 (A) Plant seedlings (B) Pea (C) Liver cells (D) Bacteria
- 3) The number of capsomers present in Adenovirus is:
 (A) 252 (B) 154 (C) 162 (D) 175
- 4) The study of distribution of animals in nature is called
 (A) Biogeography (B) Paleontology (C) Zoogeography (D) Biodiversity
- 5) Which of the following monosaccharide represent the reducing sugar?
 (A) Starch (B) Fructose (C) Lactose (D) Maltose
- 6) Most wide spread problem for the misuse of antibiotics is:
 (A) Disturbance of metabolism (B) Immunity (C) Increase resistance in pathogens (D) Allergic reaction
- 7) Which of the following does occur for the formation of Acetyl Co A from pyruvate?
 (A) Carboxylation (B) Hydrogenation (C) Decarboxylation (D) Deamination
- 8) Villi and microvilli are present in:
 (A) Large intestine (B) Esophagus (C) Ileum (D) Pharynx
- 9) Lungs are covered by doubled layered thin membranous Sacs called
 (A) Pericardium (B) Pleura (C) Peritoneum (D) Scrotum
- 10) Chordae tendinae are present in:
 (A) Only right atrium (B) Only left ventricle (C) Only right ventricle (D) Both ventricles
- 11) A hormone released by mesophyll cells at high temperature is called:
 (A) Acetic acid (B) Auxins (C) Ethene (D) Absciscic acid
- 12) An outer flexible covering in paramecium is called:
 (A) Pellicle (B) Cell wall (C) Cell membrane (D) Cristae
- 13) Griseofulvin is used to:
 (A) Lower blood cholesterol (B) Relieve migraine (C) Prevent Tissue rejection (D) Inhibit Fungal growth
- 14) The name Nicotiana Tobacum is given to:
 (A) Tobacco (B) Potato (C) Red pepper (D) Tomato
- 15) During development, ectoderm layer gives rise to:
 (A) Muscular system (B) Integumentary system (C) Digestive tract (D) Liver
- 16) Which of the following vertebrate is without Jaw?
 (A) Chondrichthyes (B) Trout (C) Hag fishes (D) Perch
- 17) Chlorophyll absorbs mainly wavelength
 (A) Violet-blue (B) Yellow (C) Green (D) Indigo

1129A -- 1123 -- 11000 (4)

Section ----- I

2. Answer briefly any Eight parts from the followings:-

8 × 2 = 16

- (i) Describe ionization of water. (ii) How inhibitors inhibit enzymes.
(iii) Why only active site is used in catalysis? (iv) How pH change / alters rate of catalysis?
(v) What is yeast? (vi) What are various types of spores found in fungi?
(vii) What are porifers? (viii) Describe mantle?
(ix) What type of fins are found in bony fishes? Write their function?
(x) Define placenta? Write two characters of placental mammals.
(xi) What do you mean by compensation point? (xii) Define anaerobic respiration.

3. Answer briefly any Eight parts from the followings:-

8 × 2 = 16

- (i) Why is it difficult to define life? (ii) Name any four attributes of population.
(iii) Why Fluid Mosaic Model of cell membrane is widely accepted?
(iv) Describe Ribosomes structure of function. (v) Kingdom Protista is defined by exclusion why?
(vi) Why ciliates differ from other protozoan? (vii) How algae differ from plants?
(viii) Why is Plasmodial Slime mold considered as a model organism. (ix) What is paraphyses?
(x) Write down the names of four genera of Gymnosperms. (xi) What is bleeding in plants?
(xii) What is Cooley's Anaemia?

---(02)---

4. Answer briefly any Six parts from the followings:-

6 × 2 = 12

- (i) Define species. (ii) How cyst is different from spore?
(iii) How does stomach wall is being prevent from digestion?
(iv) Differentiate between peristalsis and Antiperistalsis.
(v) Give name of cells of gastric gland with their secretions.
(vi) What is photorespiration? Give its products. (vii) What is Asthma? Write down its causes.
(viii) How does exhalation and inhalation occur in cockroach?
(ix) In what way respiration in birds is the most efficient?

Section ----- II

Note: Attempt any three questions.

(8 × 3 = 24)

5. (a) Discuss briefly phyletic lineage in biological organization.
(b) Explain pressure flow theory proposed by Ernst Munch in 1930.
6. (a) What do you know about the structure of Nucleic Acids?
(b) Write a comprehensive note on the sexual reproduction in Fungi.
7. (a) Discuss growth and reproduction in Bacteria.
(b) Describe life cycle of an angiospermic plant.
8. (a) Describe the infection cycle of HIV?
(b) What are photosynthetic pigments? Discuss their role in the photosynthesis?
9. (a) Discuss Fluid Mosaic Model of Plasma Membrane. (b) Explain Digestion in Cockroach.

Sargodha Board-2022

Warning:- Please, do not write anything on this question paper except your Roll No.

1222 (Inter Part – II)

(Session 2018-20 to 2020-22)

Roll No-----

Biology (Objective)

Paper (II)

Sig. of Student -----

Time Allowed:- 20 minutes

PAPER CODE 4465

Maximum 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. Write **PAPER CODE**, which is printed on this question paper, on the both sides of the Answer Sheet and fill bubbles accordingly, otherwise the student will be responsible for the situation. Use of Ink Remover or white correcting fluid is not allowed.



Q.1

1. Aquatic environment can be classified as
(A) Fresh water (B) Marine water (C) Terrestrial (D) Both A and B
2. Tundra Ecosystem have
(A) Caribou (B) Arctic foxes (C) Both A and B (D) Bison herds
3. There is no structural and functional relationships between nutritive and excretory system in
(A) planarian (B) Earthworm (C) Cockroach (D) All A,B and C
4. The inactive and Non-Conducting Wood is called
(A) Sapwood (B) Heartwood (C) Both A and B (D) None of these
5. The muscles which work against each other by contraction are
(A) Agonistic muscles (B) Antiparalel muscle (C) Antagonistic (D) Both A and C
6. The Unicellular organisms respond to changes in
(A) Temperature (B) Light intensity (C) Various chemicals (D) All A,B and C
7. Decrease in _____ level onset the birth
(A) Estrogen level (B) Progesterone level (C) ACTH (D) Oxytocin
8. Negative Physiological changes in our body is called
(A) Gerontology (B) Aging (C) Regeneration (D) Abnormal Development
9. In _____ the individuals are borne with small skull.
(A) Microcephaly (B) Megacephaly (C) Sciatica (D) Tetanus
10. The synthesis of all the biomolecules of an organism is catalysed by
(A) Hormones (B) Enzymes (C) DNA (D) RNA
11. The partition of the centriole takes place during interphase but present in the same
(A) Centomere (B) Centrum (C) Centrosome (D) Cytosome
12. Chromosomal Condensation reaches to its maximum during _____ phase.
(A) Zygotene (B) Pachytene (C) Diplotene (D) Diakinesis
13. A rare X-linked recessive trait is
(A) Down's Syndrome (B) Testicular Feminization Syndrome (C) Turner's Syndrome (D) All A,B and C
14. PCR Amplification and analysis can be used to diagnose
(A) Viral infections (B) Genetic Disorders (C) Cancer (D) All A,B and C
15. In Plant cells, there is full genetic potential of the organism, hence called
(A) Totipotent (B) Impotent (C) Meristems (D) Both A and C
16. Galapagos islands were inhabited by _____ of Finches
(A) 12 types (B) 13 types (C) 30 types (D) 40 types
17. A niche is defined as the role of a species that plays in a community including
(A) Behaviour (B) Influence (C) Both A , B (D) None of these

1222(Inter Part-II)

Biology (Subjective)

Time Allowed: 2.40 hours



(Session 2018-20 to 2020-22)

Paper (II)

Maximum Marks: 68

Section ----- I

2. Answer briefly any Eight parts from the followings:-

8 × 2 = 16

- | | |
|---|---|
| <p>(i) What different adaptations have been made by xerophytes to limit water loss?</p> <p>(iii) Differentiate between ammonotelic and uricotelic animals. Give examples.</p> <p>(v) Differentiate between sapwood and heartwood.</p> <p>(vii) Interpret the effect of photoperiodism as studied by Garner and Allard.</p> <p>(ix) Write a note on productivity of aquatic ecosystem</p> <p>(xi) Write a note on water as a renewable resource.</p> | <p>(ii) Enlist any four nitrogenous wastes produced as a result of purine and pyrimidine metabolism.</p> <p>(iv) Define Collenchyma cells.</p> <p>(vi) Write down any four functions of skeletal system.</p> <p>(viii) What is diploid parthenogenesis?</p> <p>(x) Outline animal life of temperate deciduous forests</p> <p>(xii) How wild life plays an important role in food chain.</p> |
|---|---|

3. Answer briefly any Eight parts from the followings:-

8 × 2 = 16

- | | |
|--|--|
| <p>(i) Justify that sympathetic system is associated with fight or flight.</p> <p>(iii) Interpret habituation with the help of an example</p> <p>(v) What are pseudoautosomal genes? Give an example</p> <p>(vii) Who and when developed the PCR? Why it is named so?</p> <p>(ix) Write about vortex mixing method to insert genes into the eggs of animals.</p> <p>(xi) Differentiate between Hydrosere and Xerosere.</p> | <p>(ii) Write functions of Gastrin. From Where it is secreted?</p> <p>(iv) Why blood pressure is a multifactorial trait?</p> <p>(vi) What is Gene linkage and Linkage group?</p> <p>(viii) How foreign genes can be introduced into plant embryos or protoplasts?</p> <p>(x) Differentiate between Secondary and Tertiary Consumers.</p> <p>(xii) Elaborate symbiosis with an example.</p> |
|--|--|

4. Answer briefly any Six parts from the followings:-

6 × 2 = 12

- | | |
|---|---|
| <p>(i) How neural plate is formed during chick development.</p> <p>(iii) Compare Heterochromatin with Euchromatin.</p> <p>(v) How many binding sites are found in promotor of prokaryotes and Eukaryotes.</p> <p>(vii) How can you identify the cancer cells?</p> <p>(ix) How artificial Selection is different from Natural selection.</p> | <p>(ii) Differentiate between growth and development.</p> <p>(iv) Which codons are called stop codons and why?</p> <p>(vi) What are the functions of Mitotic apparatus.</p> <p>(viii) Define Neo-Darwinism.</p> |
|---|---|

Section ----- II

Note: Attempt any three questions.

(8 × 3 = 24)

5. (a) Discuss the osmoregulatory strategies in the animals of terrestrial environment.
- (b) Write a note on food chain and food web.
6. (a) Explain in detail the significance of Hydrostatic skeleton in animals having no hard parts such as bones.
- (b) Write a note on Transcription along with a neat diagram.
7. (a) How does diffused type of nervous system differ from central nervous system. List the differences by taking example of one animal with diffused nervous system and other with central nervous system.
- (b) Explain the population explosion, its control, consequences and causes.
8. (a) What are sexually transmitted Diseases? Explain.
- (b) Discuss pattern of Sex-determination in Animals?
9. (a) Explain role of nucleus in development by giving example of Acetabularia.
- (b) Describe the details of engulfment of Aerobic bacteria and cyanobacteria by a prokaryotic cell to develop a Eukaryotic cell?

Warning:- Please, do not write anything on this question paper except your Roll No.

1221 (Inter Part-II)

(Session 2017-19 to 2019-21)

Biology (Subjective)

Paper (II)

Time Allowed: 2.40 hours

Maximum Marks: 68

Section ----- I

2. Answer briefly any Eight parts from the followings:-

8 × 2 = 16

- (i) Compare physical control system with living control system. (ii) Compare hydrophytes with mesophytes. (iii) Describe thermostat function and feed back mechanism in human. (iv) How hematoma is formed? (v) Differentiate between fibers and sclerides. (vi) Differentiate between hyaline cartilage and fibrocartilage. (vii) How seedless fruits are formed? (viii) Define fruit set in plants. (ix) Differentiate between phytoplanktons and zooplanktons. (x) Write human impact on coniferous alpine and boreal forests. (xi) Differentiate between renewable and non renewable resources. (xii) What are green house and green house gasses?

3. Answer briefly any Eight parts from the followings:-

8 × 2 = 16

- (i) Differentiate between stimulus and respons. (ii) What is epilepsy? (iii) Define Kinesis with an example. (iv) Differentiate between complete dominance and co-dominance. (v) Define population and gene pool. (vi) Define linkage and crossing over. (vii) Give two possible ways to get gene of interest. (viii) What is gene therapy? (ix) Differentiate between transgenic plants and transgenic animals. (x) What is symbiosis name its types. (xi) Differentiate between ecosystem and biosphere. (xii) Define nitrification and denitrification.

4. Answer briefly any Six parts from the followings:-

6 × 2 = 12

- (i) What are apical meristems? (ii) Explain the compensatory effect in growth. (iii) What are Purines and Pyrimidines? (iv) What is Anti-Sense strand? (v) How the Genetic code is universal? (vi) Differentiate between interphase and mitotic phase. (vii) What is metastasis? (viii) What is membrane Invagination Hypothesis? (ix) Write a note on the Vestigial organs.

Section ----- II

Note: Attempt any three questions.

(8 × 3 = 24)

5. (a) Discuss osmoregulation in plants.
(b) Explain different stages of nitrogen cycle with the help of a diagram.
6. (a) Give an account of bones of Skull (cranial and facial)
(b) Define chromosomes. Give their chemical composition in detail.
7. (a) Differentiate between axons and dendrites.
(b) What is acid rain?
8. (a) Define parthenogenesis. Explain different types of parthenogenesis.
(b) Describe the genetics of colour-blindness in humans.
9. (a) Discuss role of Nucleus in development through an experiment.
(b) Explain main points developed by Darwin in his book "The Origin of Species".

1221 Warning:- Please write your Roll No. in the space provided and sign. Roll No. _____

(Inter Part – II)

(Session 2017-19 to 2019-21)

Sig. of Student _____

Biology (Objective)

Paper (II)

Time Allowed:- 20 minutes

PAPER CODE 4465

Maximum Marks:- 17

Notes:- 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. Write PAPER CODE, which is printed on this question paper, on the both sides of the Answer Sheet and fill bubbles accordingly, otherwise the student will be responsible for the situation. Use of Ink Remover or white correcting fluid is not allowed.

Q.1



1. Coniferous forests located at high altitude are called
(A) Alpine (B) Boreal (C) Taiga (D) Prairies
2. CFCs are produced by
(A) Fats (B) Industrial machines (C) Air conditioners and Refrigerators (D) Aeroplanes
3. Which organ is the central station of metabolism.
(A) Kidney (B) Liver (C) Spleen (D) Heart
4. Most invertebrates, fish, amphibians and reptiles are included in
(A) Ectotherm (B) Endotherm (C) Heterotherm (D) Homeotherm
5. The end of muscle which remains fixed when muscle contracts
(A) Insertion (B) Belly (C) Origin (D) Tendon
6. Muscle is connected to bone by
(A) Ligament (B) Belly (C) Z-line (D) Tendon
7. The processes conducting impulses away from the cell body are called
(A) Dendron (B) Dendrites (C) Nissl granules (D) Axon
8. Human sperms are formed in
(A) Seminiferous tubules (B) Epididymis (C) Vas deferens (D) Ureter
9. Discharge of egg from the ovary is called
(A) Oogenesis (B) Menstruation (C) Ovulation (D) Menopause
10. The unspecialized cells present in Flatworms and planaria are
(A) Neoblast (B) Osteoblast (C) Epiblast (D) Hypoblast
11. Which one of the following is Initiation Codon.
(A) GUA (B) UGA (C) AUG (D) GAC
12. Synapsis takes place in
(A) Leptotene (B) Zygotene (C) Pachytene (D) Diakinesis
13. Failure of separation of chromosomes is called
(A) Disjunction (B) Separation (C) Non-disjunction (D) Metastasis
14. Secretors have dominant Secretor gene "Se" on chromosome:
(A) 19 (B) 9 (C) 7 (D) 21
15. Urine is a preferable vehicle for Biotechnology product than
(A) Blood (B) Milk (C) Plasma (D) Serum
16. The change in frequency of alleles at a locus that occurs by chance
(A) Crossing over (B) Mutation (C) Migration (D) Genetic Drift
17. The relationship between insects and flowering plants is an example of
(A) Parasitism (B) Predation (C) Mutualism (D) Commensalism

Sargodha Board-2019

Warning:- Please, do not write anything on this question paper except your Roll No.

1219 (Inter Part - II)

(Session 2015-17 to 2017-19)

Biology (Objective)

Paper (II)

Time Allowed:- 20 minutes

PAPER CODE 4465

Maximum 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. Write **PAPER CODE**, which is printed on this question paper, on the both sides of the Answer Sheet and fill bubbles accordingly, otherwise the student will be responsible for the situation. Use of Ink Remover or white correcting fluid is not allowed.

Q.1



1. Desert ecosystem of Bhakkar and Mianwali is
(A) Thar (B) Thal (C) Cholistan (D) Rohi
2. Establishment of new forests where no forest existed previously
(A) Afforestation (B) Reforestation (C) Deforestation (D) Forestation
3. Detection of change and signalling for effector's response to control system is
(A) Positive feed back (B) Negative feed back (C) Feed back mechanism (D) Feed forward mechanism
4. Aldosterone is involved in
(A) Transport of potassium ions into kidneys (B) Uptake of Sodium in Loop of Henle (C) Transport of water (D) Reabsorption of water
5. Proteins that bind to calcium in muscle contraction
(A) Actin (B) Myosin (C) Tropomyosin (D) Troponin
6. Action of Venus Fly trap is
(A) Nyctinasty (B) Photonasty (C) Haptonasty (D) Thermonasty
7. Testosterone is secreted by
(A) Sertoli cells (B) Interstitial cells (C) Germinal epithelium (D) Prostate gland
8. All of the following are day neutral plants EXCEPT.
(A) Pea (B) Wheat (C) Maize (D) Cotton
9. Contractile ring in cytokinesis is formed by
(A) Tubulin (B) Actin and Myosin (C) Keratin (D) Cyclins
10. Trisomy of chromosome 18 is found in
(A) Down's syndrome (B) Patau syndrome (C) Edward syndrome (D) Jacob's syndrome
11. The number of spinal nerves in man
(A) 24 (B) 62 (C) 12 (D) 31
12. Pigment free area that appear at the time of fertilization in amphibians is
(A) Animal pole (B) Vegetal pole (C) Yolk (D) Grey crescent
13. Each Okazaki fragment is synthesized by
(A) RNA polymerase (B) DNA polymerase I (C) DNA polymerase II (D) DNA polymerase III
14. Which traits are more common in male humans
(A) X-linked dominant (B) X-linked recessive (C) Sex limited (D) Sex influenced
15. Polyhydroxy butyrate is
(A) Antithrombin III (B) Nutra sweet (C) Biodegradable plastic (D) Anti body from soyabean
16. According to Endosymbiotic hypothesis, the aerobic bacteria developed into
(A) Ribosomes (B) Chloroplasts (C) Mitochondria (D) Golgi bodies
17. Bacteria in the root nodules fix nitrogen and convert it into
(A) Nitrate (B) Nitrite (C) Amino acids (D) Ammonia

1283 -- 1219 -- 12000 (3)

Sargodha Board-2019

Warning:- Please, do not write anything on this question paper except your Roll No.

1219 (Inter Part-II)

Biology (Subjective)

Time Allowed: 2.40 hours



(Session 2015-17 to 2017-19)

Paper (II)

Maximum Marks: 68

Section ----- I

2. Answer briefly any Eight parts from the followings:-

8 × 2 = 16

- | | |
|---|--|
| (i) Differentiate between ureotelic and uricotelic. | (ii) What is flame cell, give its function? |
| (iii) How plants respond to cold stress? | (iv) What is Hydrostatic skeleton, give example? |
| (v) What are synovial joints? | (vi) Write two adaptations in birds that help them for flight. |
| (vii) Give at least two uses of PCR amplification and analysis. | (viii) Write down the average rain fall of grassland and temperate deciduous forest. |
| (ix) Differentiate between weather and climate. | (x) What is gene pharming? |
| (xi) Define soil, give its basic constituents. | (xii) What is Eutrophication? |

3. Answer briefly any Eight parts from the followings:-

8 × 2 = 16

- | | |
|--|---|
| (i) Define Reflex action and Reflex Arc. | (ii) Define the term synapse. |
| (iii) What do you know about Latent learning. | (iv) Sketch the life cycle of a BRYOPHYTE. |
| (v) What do you know about Apomixis? | (vi) Define climacteric. |
| (vii) Differentiate genotype from phenotype | (viii) Define and explain codominance. |
| (ix) What do you know about mycorrhiza. | (x) Differentiate population from community. |
| (xi) Define pleiotropy. Explain it with any one example. | (xii) What do you know about plant biomass of an ecosystem. |

4. Answer briefly any Six parts from the followings:-

6 × 2 = 12

- | | |
|--|---|
| (i) What is morulla? | (ii) What is hensen's node? |
| (iii) What is Apoptosis? | (iv) What are the functions of mitotic apparatus. |
| (v) What is a theory of special creation. | (vi) What is genetic drift? |
| (vii) Differentiate between template strand and coding strand? | (viii) What is inversion? |
| (ix) Differentiate between leading and lagging strands of DNA. | |

Section ----- II

Note: Attempt any three questions.

(8 × 3 = 24)

5. (a) Explain the process of excretion in cockroach, with diagram.
(b) Describe the symbiotic relationships in organisms.
6. (a) Describe locomotion in Paramecium. (b) Describe the process of Transcription.
7. (a) Describe the role of pancreas as an endocrine gland.
(b) Write a note on green-house effect.
8. (a) Explain female reproductive system in humans.
(b) Explain the genetic basis of human blood groups.
9. (a) Write a note on embryonic induction.
(b) Explain the theory of inheritance of acquired characteristics.

1284 -- 1219 -- 12000

Sargodha Board-2018

Warning:- Please, do not write anything on this question paper except your Roll No.

1218 (Inter Part – II)

(Session 2015-17 & 2016-18)

Biology (Objective)

Paper (II)

Time Allowed:- 20 minutes

PAPER CODE 4467

Maximum 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. Write **PAPER CODE**, which is printed on this question paper, on the both sides of the Answer Sheet and fill bubbles accordingly, otherwise the student will be responsible for the situation. Use of Ink Remover or white correcting fluid is not allowed.

Q.1



1. Position of a gene on the chromosome is called
(A) Place (B) Locus (C) Habitat (D) Allele
2. The enzyme Luciferase is produced by an insect Commonly known as
(A) House fly (B) Butterfly (C) Caddis fly (D) Fire fly
3. An essay on the principles of population was published by
(A) Sutton (B) Lyell (C) Malthus (D) Darwin
4. Symbiotic relationship between insects and flowering plants is the example of
(A) Parasitism (B) Predation (C) Commensalism (D) Mutualism
5. Coniferous forests located at high altitude are termed as
(A) Alpine (B) Boreal (C) Taiga (D) Arctic
6. The nuclear power station can last only for about
(A) 10 years (B) 20 years (C) 30 years (D) 40 years
7. Flame cells are part of excretory system of
(A) Hydra (B) Planaria (C) Earthworm (D) Cockroach
8. High degree of renal failure is also called
(A) Uremia (B) Leukemia (C) Anemia (D) Lithotripsy
9. The membrane that bounds vacuole is called
(A) Protoplast (B) Tonoplast (C) Chloroplast (D) Leukoplast
10. The movement in response to stimulus of touch i.e climbing vines, is called
(A) Phototropism (B) Geotropism (C) Thigmotropism (D) Hydrotropism
11. The largest part of brain is called
(A) Cerebellum (B) Medulla (C) Thalamus (D) Cerebrum
12. The light which promotes germination of fern spores
(A) Green (B) White (C) Blue (D) Red
13. Syphilis is caused by a spirochaete named as
(A) *Nisseria gonorrhoeae* (B) *Treponema pallidum* (C) *Escherichia coli* (D) *Hyphomicrobium*
14. Clear cytoplasm produces
(A) Larval epidermis (B) Muscle cell (C) Gut (D) Neural tube
15. Strand of DNA which is not transcribed is called as
(A) Template strand (B) Antisense strand (C) Coding strand (D) Lagging strand
16. Cell death due to tissue damage is called
(A) Apoptosis (B) Metastasis (C) Cyclosis (D) Necrosis
17. Post mitotic cell can exit the cell cycle during phase
(A) G-0 (B) G-1 (C) G-2 (D) S

1275A -- 1218 -- 9000 (4)

Sargodha Board-2018

Warning:- Please, do not write anything on this question paper except your Roll No.

1218 (Inter Part-II)

Biology (Subjective)

Time Allowed: 2.40 hours



(Session 2015-17 & 2016-18)

Paper (II)

Maximum Marks: 68

Section ----- I

2. Answer briefly any Eight parts from the followings:-

8 × 2 = 16

- | | |
|---|---|
| (i) Why leaves are called excretophores? | (ii) Give two characters of smooth muscles. |
| (iii) Define the process of panting with example. | (iv) What is Vascular Cambium. Give its function. |
| (v) Define moulting (Ecdysis). Give its one importance. | (vi) Differentiate between ectotherms and endotherms. |
| (vii) Define photoperiodism. | (viii) What is corpus luteum. Give its function. |
| (ix) Compare littoral zone with limnetic zone. | (x) Differentiate between prairies and savanna. |
| (xi) What is Biodiversity. Give its importance. | (xii) Why forests are called environmental buffers. |

3. Answer briefly any Eight parts from the followings:-

8 × 2 = 16

- | | |
|---|--|
| (i) What are chemoreceptors. | (ii) Define neurotransmitter give its two types. |
| (iii) What are para-sympathetic nervous system. | (iv) Differentiate between phenotype and genotype. |
| (v) Define Law of Independent Assortment. | (vi) What is test cross? Write its significance. |
| (vii) Define genomic library. | (viii) Write two application of polymerase chain reactions |
| (ix) Define palindromic sequence. | (x) Differentiate between Mutualism and commensalism. |
| (xi) Define niche. | (xii) Differentiate between food chain and food web. |

4. Answer briefly any Six parts from the followings:-

6 × 2 = 12

- | | |
|--|--|
| (i) Differentiate maturation from differentiation | (ii) What are teratogens? Give an example. |
| (iii) Differentiate natural and artificial selection. | (iv) What is a phosphodiester bond? |
| (v) How many DNA polymerases are found in prokaryotes write their names? | (vi) What are the events of zygotene of prophase-I of Meiosis? |
| (vii) Write down the two functions of programmed death of a cell. | (viii) How many chromosomes are found in Ferns and in Frog? |
| (ix) What is endosymbiont hypothesis? | |

Section ----- II

Note: Attempt any three questions.

(8 × 3 = 24)

5. (a) Discuss adaptations in plants to low and high temperature.
(b) Describe the processes in ecosystem and interaction between Biotic and Abiotic components.
6. (a) Elaborate some major functions of skeletal system.
(b) Write a note on Watson and Crick's Model of DNA.
7. (a) Write down four differences of diffused and central Nervous system.
(b) What do you know about degradation and depletion of resources?
8. (a) Discuss the process of Vernalization. (b) Describe the Genetics of colour-blindness.
9. (a) Describe the process of gastrulation in chick. (b) Describe the theory of natural selection and adaptation