

DGK- 51, 12, 19

PAPER CODE - 8461
12th CLASS - 12019

BIOLOGY, GROUP FIRST
NEW COURSE

ACADEMIC SESSION: 2015 - 2017 TO 2017 - 2019

TIME: 20 MINUTES

MARKS: 17

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

1. Most cartilaginous fishes possess salt excreting organs known as the
(A) Caecal gland (B) Foetal gland (C) Rectal gland (D) Sebaceous gland
2. In human beings, the homeostatic thermostat is present in a
(A) Amygdala (B) Hippocampus (C) Thalamus (D) Hypothalamus
3. The collenchymatous cells are highly lignified and found in the
(A) Epidermis (B) Cortex (C) Pith (D) Xylem
4. Tube feet are locomotory organs of
(A) Jelly fish (B) Silver fish (C) Cuttle fish (D) Star fish
5. Flowering is induced in pineapple by growth hormone called
(A) Gibberellins (B) Absciscic acid (C) Cytokinins (D) Ethene
6. Low temperature treatment given to plants stimulates the production of vernalin which is actually the
(A) Auxin (B) Gibberellins (C) Cytokinins (D) Ethene
7. Most of the major organs of embryo are formed within the
(A) 10 week (B) 12 week (C) 14 week (D) 16 week
8. Gray vegetal cytoplasm gives rise to
(A) Larval epidermis (B) Muscle cell (C) Gut (D) Neural tube
9. Sickle cell anemia is caused due to change of glutamic acid to
(A) Histidine (B) Lucine (C) Valine (D) Prolin
10. The spindle fibers are composed of traces of RNA and a protein called
(A) Insulin (B) Actin (C) Myosin (D) Tubulin
11. Separation of homologous chromosomes occur during
(A) Prophase (B) Metaphase (C) Anaphase (D) Telophase
12. If an offspring has its parental types 30+30 and recombinant types 20+20. What is the percentage of its recombination frequency.
(A) 20 (B) 40 (C) 60 (D) 80
13. A team of Japanese scientists are attempted to introduce the C4 Cycle into the
(A) Wheat (B) Rice (C) Corn (D) Cotton
14. Flagella may have arisen through ingestion of Prokaryotes like
(A) Closteridium (B) Vibro (C) Spirochetes (D) Salmonella
15. Relationship between insects and flowering plants is the example of
(A) Commensalism (B) Mutualism (C) Predation (D) Parasitism
16. Andropogon, Stipa and Panicum are found in ecosystem called.
(A) Grass land (B) Desert (C) Tundra (D) Coniferous
17. The percentage of land under cultivation is
(A) 30 % (B) 21% (C) 11% (D) 5%

SECTION-I

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

1	Write two adaptations of xerophytes.
2	Make sketch of urea cycle.
3	Briefly describe hemodialysis.
4	What is sciatica and its causes.
5	Differentiate between active and passive flight.
6	What are synovial joints ? Write the names of its two types.
7	Write two practical uses of DNA finger printing technology.
8	What are restriction endonucleases?
9	What is limnetic zone, mention its life.
10	Write about two factors which influence life on land
11	What is population explosion, write its two causes.
12	What is algal bloom?

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

1	Write down the functions of sympathetic nervous system.
2	What are two similarities of nervous coordination and chemical coordination?
3	Define diurnal rhythms and circannual rhythms
4	Define asexual and sexual reproduction.
5	What do you know about apomixis ?
6	Write down the function of ACTH released from fetal pituitary.
7	Define test cross.
8	What is a genic system for determination of sex ?
9	Define Pleiotropy with an example.
10	Define biogeochemical cycle.
11	How Niche is different from habitat?
12	Define food chain , draw an example of simple food chain.

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

1	Define aging. Give four signs of aging.
2	Compare determinate with indeterminate growth.
3	Differentiate between malignant and benign tumor.
4	What is the cause and symptoms of Down's syndromes.
5	Name any four animal species declared extinct in Pakistan.
6	How molecular biology provides an evidence for evolution?
7	Write down the structural formulae of cytosine and thiamine.
8	What is alkaptonuria? Give its cause.
9	Differentiate between template and coding strand.

SECTION-II

Note: Attempt any Three questions from this section

8 x 3 = 24

Q.5.(A)	Explain different stages of xerosere succession.
(B)	Describe excretion in plants.
Q.6.(A)	Describe the mechanism of repair of broken bone.
(B)	How Alfred Hershey and Martha Chase proved that DNA is hereditary material?
Q.7.(A)	Differentiate between nervous system of Hydra and Planaria.
(B)	Write a note on degradation and depletion of energy resources.
Q.8.(A)	Sketch the life cycle of an Angiosperm.
(B)	Define sex linkage. Discuss X-linked dominant inheritance in humans.
Q.9.(A)	Define Meristem , describe its various types.
(B)	Write a note on endangered species.

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OBJECTIVE

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QUESTION NO. 1

1	Flame cells are the part of excretory system of (A) Hydra (B) Earthworm (C) Planaria (D) Cockroach
2	End product of haemoglobin breakdown is (A) Uric acid (B) Urea (C) Ammonia (D) Bilirubin
3	The membrane that bounds vacuole is (A) Tonoplast (B) Chloroplast (C) Epiblast (D) Hypoblast
4	Action of Venus fly trap is (A) Nyctinasty (B) Photonasty (C) Haptonasty (D) Thermonasty
5	Part of brain which controls breathing, heart rate and swallowing is (A) Cerebrum (B) Medulla (C) Cerebellum (D) Mid brain
6	Reproduction is necessary for the survival of. (A) Species (B) Community (C) Individual (D) Biome
7	Luteinizing hormone induces. (A) Flowering (B) Vernalization (C) Menopause (D) Ovulation
8	Hypoblast is mainly presumptive. (A) Endoderm (B) Ectoderm (C) Mesoderm (D) Blastoderm
9	Pentose sugar in the molecule of DNA is (A) Ribose (B) Deoxyribose (C) Lactose (D) Sucrose
10	Pairing of homologous chromosomes is completed in (A) Leptotene (B) Zygotene (C) Pachytene (D) Diplotene
11	Which pair of chromosome fails to segregate in Down's syndrome. (A) 7 th (B) 15 th (C) 19 th (D) 21 th
12	Green colour blindness is called (A) Tritanopia (B) Protanopia (C) Deuteranopia (D) Protonema
13	An antibody made by soybean can be used as treatment for (A) Herpes simplex (B) Malaria (C) AIDS (D) Gonorrhoea
14	Who published the essay on the "Principles of Population". (A) Darwin (B) Wallace (C) Malthus (D) Lyell
15	All the food chains and food webs begin with (A) Consumers (B) Carnivores (C) Decomposers (D) Producers
16	In Sindh, desert ecosystem is called (A) Thal (B) Thar (C) Cholistan (D) Sahara
17	Which of the following act as environmental buffers? (A) Deserts (B) Forests (C) Industry (D) Fossil fuels

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SEQUENCE - 1

D

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BIOLOGY, GROUP SECOND
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SUBJECTIVE
SECTION-I

TIME: 2.40 HOURS
MARKS: 68

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

- 1 Why leaves are called excretophores?
- 2 Differentiate between Protonephridium and Metanephridium
- 3 Account one each main adaptation in plants to high and low temperature.
- 4 Differentiate between cork cambium and vascular cambium.
- 5 Explain hinge joint.
- 6 Why moulting takes place in Arthropods?
- 7 How urine is a preferable vehicle for biotechnology product than milk?
- 8 Write the two uses of PCR amplification and analysis.
- 9 Write human impact on coniferous forests?
- 10 List four adaptations in plants and animals for terrestrial ecosystem.
- 11 Explain the human role for global warming.
- 12 How forests play a role as environmental buffers?

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

- 1 What are effectors ? Give Examples.
- 2 Differentiate between gastrin and secretin hormone.
- 3 Define Chlorosis. Give its cause.
- 4 What are viviparous? Give an example.
- 5 What is genital herpes and its cause?
- 6 Define haploid parthenocarpy with an example.
- 7 Define epistasis.
- 8 What are polygenic traits? Give an example.
- 9 Define Mendel's law of segregation.
- 10 What is commensalism?
- 11 Differentiate between predation and parasitism.
- 12 How community differs from population?

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

- 1 What is one gene one polypeptide hypothesis?
- 2 How eukaryotic mRNA is protected from cytoplasmic nucleases?
- 3 What are chromosomal aberrations ? Quote examples as well.
- 4 What is primary organizer and primary induction?
- 5 Differentiate between area pellucida and area opaca.
- 6 Define crossing over and synapsis.
- 7 Differentiate between Benign and Malignant tumors.
- 8 Differentiate between natural selection and artificial selection.
- 9 Define Homology with an example.

SECTION-II

Note: Attempt any Three (3) questions from this section

8 x 3 = 24

Q.5.(A)	Discuss structure and function of nephron.
(B)	Describe the first four stages of xerosere.
Q.6.(A)	Describe the process of repair of a simple bone fracture.
(B)	Describe Meselson -Stahl experiment regarding DNA replication
Q.7.(A)	Define learning behaviour, describe its various types.
(B)	Write a detailed note on Eutrophication.
Q.8.(A)	Write a note on Birth process in human female.
(B)	Explain genetics of colourblindness in human.
Q.9.(A)	Write a note on Neo-Darwinism.
(B)	What is growth? Discuss different phases of growth?