

ROLL NO

PAPER CODE - 8462

(12th CLASS – 12015)

BIOLOGY , GROUP SECOND

Academic Session 2012-2014 and 2013-2015

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 Saliva and urine are used for evaporating cooling by
(A) bat (B) Dogs (C) Birds (D) Seals
- 2 The homeostatic thermostat is preset in
(A) Pituitary (B) Hypothalamus (C) Pancrease (D) Kidney
- 3 The incidence of calcium oxalate type of kidney stones is
(A) 10 % (B) 15 % (C) 70 % (D) 80 %
- 4 Positive gravitropism of root is due to
(A) Auxin (B) Gibberellin (C) Abscisic acid (D) Ethene
- 5 The number of spinal nerve in man is
(A) 24 (B) 62 (C) 12 (D) 31
- 6 Rapid aging and low resistance to environmental stress and diseases are limitations of
(A) Parthenocary (B) Vernalization (C) Cloning (D) Photo tropism
- 7 Evolution of pollen tube is parallel to the evolution of
(A) Stem (B) leaves (C) flower (D) seed
- 8 The shell of chick egg is secreted as egg passes through
(A) oviduct (B) Uterus (C) Ovary (D) fallopian tube
- 9 RNA polymerase II synthesizes
(A) mRNA (B) tRNA (C) Ω RNA (D) CDNA
- 10 The pairing of homologous chromosomes occurs during
(A) Leptotene (B) Zygotene (C) Pachytene (D) Diplotene
- 11 The stage of prophase that lasts for days, weeks or even years is
(A) Leptotene (B) Zygotene (C) Pachytene (D) Diplotene
- 12 The gene for blue opsin is present on autosome
(A) 7 (B) 11 (C) 19 (D) 21
- 13 Adult transgenic tobacco plants glow when sprayed with the substrate
(A) Luciferin (B) Myoglobin (C) Haemoglobin (D) Methionine
- 14 In human eustachian tubes connect middle ear with
(A) Nose (B) Eye (C) Throat (D) Brain
- 15 An association between two organisms by which both are benefitted is called
(A) Parasitism (B) Commensalism (C) Predation (D) Mutualism
- 16 Northern coniferous forests are called
(A) Alpine (B) Boreal (C) Taiga (D) Prairies
- 17 A chemical which kills weed plants is called
(A) Pesticide (B) Insecticide (C) Fungicide (D) Herbicide

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QUESTION NO. 1

- 1 The mechanism of evaporative cooling in respiratory tract of dog is known as
(A) Panting (B) Shivering thermogenesis (C) Thermoregulation (D) Vasodilation
- 2 Which of the following is an Endotherm ?
(A) Humming Bird (B) Reptiles (Lizard) (C) Birds (D) Bat
- 3 The word tropic is derived from Greek word " Tropos " meaning
(A) Sticky (B) Turn (C) Attractive (D) Growth
- 4 All of the following bones are associated with coxal bone , except
(A) Ilium (B) Isehium (C) Pubis (D) clavicle
- 5 In neurons the message is transmitted across synapse in the form of chemical messenger called
(A) Neurotransmitters (B) Communication (C) Nerve impulse (D) Synaptic vesicle
- 6 Fruit ripening is often accompanied by burst of respiratory activity called
(A) Apomixes (B) Climatric (C) Photoperiodism (D) Endosperm
- 7 Between the seminiferous tubules are interstitial cells , which secrete
(A) Spermatzoa (B) Estrogen (C) Testosterone (D) Corpus luteum
- 8 Which one of the following sex chromosomal abnormalities leads to tallness , aggressiveness and antisocial behaviour ?
(A) XYY (B) XXY (C) XO (D) XXXY
- 9 The particular array of chromosomes that an individual possesses is called its
(A) Genome (B) Karyotype (C) Gene pool (D) DNA - duplex
10. Which one sub-stage of Prophase-I of Meiosis-I lasts for days , weeks or even years ?
(A) Zygotene (B) leptotene (C) Pachytene (D) Diplotene
- 11 The Syndrome in which individual has short stature , webbed neck , with - out ovaries and complete absence of germ cells is
(A) Mongolism (B) Kline felter syndrome (C) Down's syndrome (D) Turner's syndrome
- 12 Different alleles of a gene that are both expressed in a heterozygous condition are called
(A) Co-dominant (B) Dominant (C) Over-dominance (D) incomplete dominance
- 13 Cystic fibrosis patients lack a gene that codes for trans-membrane carrier of the
(A) Sodium ions (B) Chloride ions (C) Calcium ions (D) Potassium ions
- 14 Tubes that connect the middle ear with the throat in humans are called
(A) Eustachian tube (B) Neural tube (C) Fallopian tube (D) Nephridial tube
- 15 The process in which micro-organisms use the proteins and amino acids and release ammonia or ammonium ions is known as
(A) Nitrification (B) Ammonification (C) Denitrification (D) Assimilation
- 16 Ecosystem present on Land or Soil is called
(A) Terrestrial (B) Atmosphere (C) Lithosphere (D) Both A and C
- 17 Establishment of new forests where no forests existed previously is called
(A) A - forestation (B) Reforestation (C) Deforestation (D) Forestation

ROLL NO

BIOLOGY, GROUP FIRST

(ACADEMIC SESSION : 2012 – 2014 and 2013 - 2015)

12th CLASS - 12015)

SUBJECTIVE

TIME : 3.10 HOURS

MARKS : 83

SECTION-I

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

- (1) Differentiate between osmoregulation and thermoregulation
- (2) What do you know about excretophore
- (3) Give the special features of Malpighian tubules
- (4) What is T-system ?
- (5) Write down the difference between Tetany and Tetanus
- (6) Compare effective and recovery stroke in paramecium
- (7) Enlist the key events in animal's development
- (8) Compare epiblast and hypoblast in Gastrulation stage of Development
- (9) What is kinetochore ?
- (10) What do you know about Turner's syndrome ?
- (11) Give the role of migration in affecting gene frequency
- (12) Give the steps involved in membrane invagination hypothesis

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

- (1) How instinctive behaviour differs from learned behaviour ?
- (2) Give any two similarities between nervous and chemical coordination ?
- (3) Anterior lobe of pituitary gland is called master gland. Discuss
- (4) How external fertilization differs from internal fertilization ?
- (5) Give two advantages of cloning
- (6) Write a brief note on tissue culture
- (7) Define genomic library
- (8) What are restriction enzymes ?
- (9) Differentiate between alpine and boreal forests
- (10) Differentiate between Savanna and prairies
- (11) What is difference between afforestation and reforestation
- (12) What is stone cancer ? Give its cause

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

- (1) Define semi conservative replication
- (2) Compare template strand with coding strand
- (3) Define Transformation
- (4) Differentiate between sex chromosomes and autosomes
- (5) Define Y-linked trait with one example
- (6) What is MODY ?
- (7) Describe effect of moderate grazing
- (8) What do you know about commensalism ?
- (9) Differentiate between pioneers and climax community

SECTION-II

Note: Attempt any Three questions from this section

8 x 3 = 24

- | | | |
|-------|--|---|
| 5.(a) | Explain thermoregulation in mammals | 4 |
| (b) | Define and explain green house effect | 4 |
| 6.(a) | Explain membrane invagination theory for the evolution of eukaryotic cells | 4 |
| (b) | Give an account of skull bones | 4 |
| 7.(a) | Describe feedback mechanism with example | 4 |
| (b) | Describe biotic components of an ecosystem | 4 |
| 8.(a) | What is parthenocarpy ? How fruits ripened ? | 4 |
| (b) | Discuss what is Genetic code | 4 |
| 9.(a) | Write a note on Growth correlations | 4 |
| (b) | Describe Epistasis with the help of an example | 4 |

SECTION - III

(PRACTICAL PART)

10. Attempt any three parts from A , B , C , D and E 5x3 = 15

- | | | |
|-------|---|---|
| (A) | Sketch and label female urinogenital system of Frog | 5 |
| (B) | Sketch and label Hind limbs of Frog | 5 |
| (C) | Write down the procedure to investigate polytene chromosome of Drosophila | 5 |
| (D) | Write down the procedure of food chain and food web of Pond Ecosystem | 5 |
| (E) | Answer the following parts | 5 |
| (i) | Define Ecosystem | |
| (ii) | What is muscle twitch ? | |
| (iii) | What is kymograph ? | |
| (iv) | What is the fate of Mesoderm ? | |
| (v) | Define zone of function | |

SUBJECTIVE

SECTION-I

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

- (1) Differentiate between osmoconformers and osmoregulators
- (2) Differentiate between endotherms and ectotherms
- (3) Define anhydrobiosis, give an example
- (4) Differentiate between epinasty and hyponasty
- (5) What are floating ribs?
- (6) What are hinge joints, give an example
- (7) What are lateral meristems and what is their role?
- (8) What is apical dominance?
- (9) What is mitotic apparatus and what is its role during cell division?
- (10) Define crossing over
- (11) What is endosymbiont hypothesis?
- (12) Differentiate between endangered and threatened species

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

- (1) Differentiate between sympathetic and parasympathetic system
- (2) Define feed back mechanism
- (3) Give types of innate behaviour
- (4) Define Apomixis
- (5) Define climacteric
- (6) Differentiate between Lactation and gestation.
- (7) How can you get a gene?
- (8) Give two goals of human genome project
- (9) Differentiate between climate and weather
- (10) Give two factors which influence life on land
- (11) Define Entrophication
- (12) Give effects of Mismanaged agriculture Ecosystem

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

- (1) Differentiate between Heterochromatin and Euchromatin
- (2) What do you know about Okazaki Fragment?
- (3) What is Central Dogma?
- (4) What is Hemophilia?
- (5) What are Opsins?
- (6) What is Hypophosphatemic Rickets?
- (7) What is meant by Biogeochemical Cycle?
- (8) Differentiate between Synecology and Autecology
- (9) What is Assimilation?

SECTION-II

Note: Attempt any Three questions from this section

8 x 3 = 24

- 5.(a) Discuss the liver as an excretory organ 4
- (b) Write down detailed note on Green house effect 4
- 6.(a) What is bone fracture? Explain the repair process of a simple fracture 4
- (b) Describe various factors affecting gene frequency 4
- 7.(a) Discuss hormones of anterior lobe of pituitary gland 4
- (b) Explain stage of xerosere 4
- 8.(a) Write a note on tissue culturing 4
- (b) Define mutation. Describe point mutations with the help of example 4
- 9.(a) Explain abnormal development 4