(Academic Sessions 2020 – 2022 to 2022 – 2024) BIOLOGY 224-1 st Annual-(INTER PART – II) Time Allowed : 20 M Q.PAPER – II (Objective Type) GROUP – I Maximum Marks : 17 PAPER CODE = 8463	Labora Daniel 2004 C 4	
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16 A patient that lacks a gene coding for trans-membrane carrier of chloride ions, suffers from		
		om ·
		1
	Which of the following is a macronutrient:	Jiia

(A) Iron

(B) Iodine

Roll No Lahore Board-2024-G-1 (To be filled in by the candidate)	
(To be filled in by the candidate) (Academic Sessions 2020 – 2022 to 2022 – 2024)	
BIOLOGY 224-1 st Annual-(INTER PART – II) Time Allowed: 2.40 ho	urs
PAPER – II (Essay Type) GROUP – I Maximum Marks: 68	
SECTION – I	
2. Write short answers to any EIGHT (8) questions:	16
(i) "Nature of excretory products is related to habitats". Justify the statement. * pakcity.org	,
(ii) How are plants adapted to low temperature?	
(iii) Why the trees are called environmental buffers?	
(iv) Elaborate the role of corpus luteum in menstrual cycle.	
(v) What do you know about "Rigor Mortis"? (vi) What are the affects of antidiuretic horm	
(vii) Differentiate tetany and tetanus. (viii) Draw the labelled diagram of a sarcomer	e.
(ix) Where Thal and Thar are situated? (x) Enlist ecosystems in Pakistan.	
(xi) How can we save energy? (xii) What is menopause? At what age it starts	s?
3. Write short answers to any EIGHT (8) questions:	16
(i) What are Meissners corpuscles?	
(ii) Define Neurotransmitters? Also give examples.	
(iii) Write down importance of midbrain.(iv) Distinguish between homozygote and heterozygote.	
(iv) Distinguish between homozygote and heterozygote.(v) Why sex influenced traits are common in one sex?	
(vi) Why urine is preferable vehicle for biotechnology product?	
(vii) Define pleiotropy with examples. (viii) Write down goals of human genome projections.	act
(ix) What problem is related to Denitrification? (x) Distinguish between Habitat and Niche?	ici.
(xi) Give sketch of a food web. (xii) List the different ways to get gene of inter-	rest
(Turn O	
(1 um Over	()
4. Write short answers to any SIX (6) questions:	12
(i) How temperature affects growth of plant?	
(ii) Differentiate apical dominance and compensatory effect.	
(iii) How does DNA fibre coil tightly?	
(iv) What are the genetic basis of sickle cell anaemia?	
(v) How recombination of genes arise during meiosis?	
(vi) Define genetic code. Give an example. (vii) What is apoptosis?	
(viii) Biogeography is an evidence of evolution. How? (ix) What are hydrothermal vents?	•
SECTION – II	
Note: Attempt any THREE questions.	
5. (a) Write down the classification scheme of animals on the basis of thermal characteristics	27
of their environment.	4
(b) What is non-disjunction? Write its genetic consequence with the example	
of Down's Syndrome.	4
6. (a) What are joints? Discuss different types of joints.	4
(b) Write a detailed note on nitrogen cycle.	4
7. (a) Give detail of major factors which are involved in resting membrane potential.	4
(b) Explain endosymbiont hypothesis for origin of eukaryotes.	4
8. (a) Describe human menstrual cycle.	4
(b) State law of independent assortment, prove it with one example.	4
9. (a) What is growth? Describe different phases of growth in plants.	4
(b) Write a comprehensive note on gene sequencing.	4
192-224-I-(Essay Typ	e)-4000
	,

Lahore Board-2024-G-2 Roll No. pakcity.org _____ (To be filled in by the candidate) (Academic Sessions 2020 – 2022 to 2022 – 2024) Time Allowed: 20 Minutes 224-1st Annual-(INTER PART – II) **BIOLOGY** Maximum Marks: 17 GROUP - II O.PAPER - II (Objective Type) PAPER CODE = 8464Note: Four possible answers A, B, C and D to each question are given. The choice which you think is correct, fill that circle in front of that question with Marker or Pen ink in the answer-book. Cutting or filling two or more circles will result in zero mark in that question. The hormone that keeps the flower fresh: (D) Cytokinins (C) Gibberellins (B) Ethene (A) Auxins The strand which leads towards the replication fork is: 2 (D) Plandromic (C) Master (B) Leading (A) Lagging How many base pairs are present in human genome: 3 (D) 09 billions (C) 07 billions (B) 03 billions (A) 05 billions Coal, oil and natural gas are examples of which resource: 4 (B) Non-renewable (D) Both B and C (C) Exhaustible (A) Renewable Liver helps to synthesize: 5 (D) Pesticide (C) Lactic acid (B) Citric acid (A) Bile Genes for albinism are located on: 6 (C) 11 chromosome (D) 9 chromosome (A) X chromosome (B) Y chromosome The muscles which have intercalated discs: 7 (C) Skeletal (D) Striped (B) Cardiac (A) Smooth (Turn Over) 1-8 Principle of population was published by: (B) Darwin (A) Cuvier (C) Wallace (D) Malthus The grass-land having no woody plants known as: 9 (B) Savanna (A) Alpine (C) Coniferous (D) Prairies 10 Gray crescent is present in: (A) Nucleus (B) Cytoplasm (C) Ribosomes (D) Cell membrane In plants which are involved in testa formation: 11 (A) Trachea (B) Tracheids (C) Sclereids (D) Collenchyma 12 The genetic code for methionine is: (A) UAA (B) GGC (C) UAC (D) AUG The endosperm of angiosperm is: 13 (A) Triploid (B) Haploid (C) Diploid (D) Polyploid The chromosomes become visible, short and thick during: 14

229-224-II-(Objective Type)- 4250 (8464)

(D) Anaphase

(D) Tsetse fly

(D) Cholistan

(C) Leptotene

(D) Anterior lobe of pituitary gland

(C) Butterfly

(C) Rohi

(A) Median lobe of pituitary gland (B) Posterior lobe of pituitary gland

(B) Diplotene

The enzyme luciferase is produced in an insect called:

(B) Housefly

(B) Thal

In Sindh the desert ecosystem is called:

(A) Diakinesis

(C) Adrenal gland

(A) Thar

MSH is secreted from the:

15

16

17

Lahore Board-2024-G-2

(To be filled in by the candidate) koll No (Academic Sessions 2020 - 2022 to 2022 - 2024) Time Allowed: 2.40 hours 224-1st Annual-(INTER PART – II) **BIOLOGY** Maximum Marks: 68 GROUP - II PAPER – II (Essay Type) SECTION - I 16 2. Write short answers to any EIGHT (8) questions : → pakcity.org (i) What do hypotonic and hypertonic environment mean for a cell? (ii) How cartilaginous fishes show osmoregulatory activity to maintain internal osmotic state with two ways? (iii) What are xerophytes, write its one adaptation and one example. (iv) Distinguish between the origin and insertion of muscle. (v) List the main parts of axial skeleton. (vi) Why ecdysis is necessary in arthropods? Justify. (vii) Name the causative agent of gonorrhea, also write its two symptoms. (viii) Write the role of oxytocin during birth process. (ix) Define desertification, give its one reason and one effect. (x) Give location and rain fall of temperate deciduous forest in Pakistan. (xi) Name one pathogenic and one nutritional deficiency disease. (xii) Write the source and harmful effects of chlorofluorocarbon. 16 3. Write short answers to any EIGHT (8) questions : (i) Justify, calcitonin is antagonistic to parathormone. (ii) Why nitrogen and magnesium deficiency leads to chlorosis? (iii) Describe two main functions of spinal cord. (iv) What are true breeding traits? (v) Is SRY gene important in females? (vi) How epistasis is different from dominance? (vii) Define anther culture. Write down its one significance. (viii) How plants are made salt tolerant? (ix) Enlist some possible ways to get a gene. (x) Give name of phases of primary succession. (xi) Why over grazing is harmful for a grassland? (xii) Define ecological niche, who proposed this term? 12 4. Write short answers to any SIX (6) questions : (i) How can aging be slowed down? (ii) How does temperature affect plant growth? (iii) What is the reason behind the development of sickle cell anemia? (iv) Define point mutation. Give an example. pakeity (v) Briefly describe the semi-conservative hypothesis of DNA replication. (vi) What is metastasis? (vii) How does cytokinesis occur in plant cell? (viii) How are evolutionary relationships among species reflected regarding DNA and proteins? (ix) What is endosymbiont hypothesis? Give an example. SECTION - II Note: Attempt any THREE questions. 4 5. (a) Explain the excretory products of different animals. (b) What are meiotic errors? Explain Mongolism and Klinefelter's Syndrome. 6. (a) Define joints. How are they classified? Explain different types of joints. 4 4 (b) Describe predation and parasitism and their significance. 4 7. (a) Briefly explain synapse. 4 (b) Discuss endangered species in detail. 4 8. (a) Define photoperiodism. Explain types of plants on its bases. (b) Briefly explain the problem erythroblastosis foetalis faced by certain parents. 9. (a) What are meristems? Explain their types highlighting their location in 4 plant body and their roles. 4 (b) Write down the steps of DNA finger printing. (Analyzing DNA) 229-224-II-(Essay Type)-17000

Roll No.	Lahore	Board	I-2023

(To be filled in by the candidate)

(Academic Sessions 2019 - 2021 to 2021 - 2023)

BIOLOGY 223 Q.PAPER – II (Objective Type)

223-1st Annual-(INTER PART - II)

GROUP - I

Time Allowed: 20 Minutes

Maximum Marks: 17

PAPER CODE = 8461

Note: Four possible answers A, B, C and D to each question are given. The choice which you think is correct, fill that circle in front of that question with Marker or Pen ink in the answer-book. Cutting or filling two or more circles will result in zero mark in that question

	The of more those will result in Zero mark in that question.	
1-1	In urea cycle, arginine splits into urea and ornithine by an enzyme:	
	(A) Arginase (B) Ornithase (C) Citrulase	(D) Dehydrogenase
2	Which vertebra in reptiles is modified for the rotational movement:	
	(A) Atlas (B) Thoracic (C) Axis	(D) Sacral
3	At the place of attachment of leaf with the shoot, a swollen part is ca	lled:
	(A) Pith (B) Pit (C) Pulvinus	(D) Cortex
4	Resting membrane potential of a neuron is:	
	(A) -50 mV (B) -70 mV (C) -60 mV	(D) -80 mV
5	Abscisic acid can be sprayed on tree crops to regulate:	
	(A) Leaf drop (B) Shoot drop (C) Flower drop	(D) Fruit drop
6	Vehicles for transport of male gamete in land plant is	
	(A) Pollen tube (B) Pollen grain (C) Vacuole	(D) Anther
7	Cell wall becomes thicker and pitted during cell	
	(A) Maturation (B) Elongation (C) Differentiation	(D) Division
8	Copying of mRNA from DNA is called	
	(A) Transduction (B) Transdation (C) Transformation	(D) Transcription
9	DNA polymerase III:	
	(A) Recognizes primer (B) Constructs primer	
	(C) Initiates DNA replication (D) Unwinds DNA helix	
10	Down syndrome is :	
	(A) Trisomy 19 (B) Trisomy 18 (C) Trisomy 21	(D) Trisomy 23
11	Bombay phenotype is an example of : pakelty.org	(5) 11101119 25
	(A) Pleiotropy (B) Epistasis (C) Probability	(D) Dominance
12	Primer for PCR contains about :	(2) 2011111110
	(A) 05 - 07 bases (B) 10 - 20 bases (C) 25 - 30 bases	(D) 30 – 40 bases
13	One common type of vector is:	(2) 20 10 0000
	(A) Plasmid (B) Chromosome (C) Lysosome	(D) Mitochondria
14	The ultimate source of all changes is:	
	(A) Genetic drift (B) Migration (C) Mutation	(D) Selection
15	Overgrazing may lead to:	
	(A) Tundra (B) Grassland (C) Desert	(D) Taiga
16	Scum in eutrophication is formed by:	
	(A) Algae (B) Fungi (C) Bacteria	(D) Virus
17	Which of these diseases is caused due to nutritional deficiency:	
	(A) Diphtheria (B) Arteriosclerosis (C) Scurvy	(D) Osteoarthritis

Please visit for more data at: www.pakcity.org

، No.	Lahore Board-2023 (To be filled in by the candidate)
	(Academic Sessions $2019 - 2021$ to $2021 - 2023$)
OLO	223-1 st Annual-(INTER PART II) Time All 1 Annual
2.PAPE	R-II (Objective Type) GROUP-II Ilme Allowed: 20 Minutes Maximum Marks: 17
N	PAPER CODE = 8464
Note: F	our possible answers A, B, C and D to each question are given. The choice which you think is correct,
	and office in front of that question with Marker or Pen ink in the ensurer book. Course of the
1-1	Wo or more circles will result in zero mark in that question. Hair end organs:
1 1-1	CAN D
	(A) Receive deep pressure stimulus (B) Receive touch stimulus
<u> </u>	(C) Are located in the limbs (D) Are sensitive for vibration sense
2	During the replication process of DNA, the lagging strand:
	(A) Replicates towards replication fork (B) Is synthesized by DNA ligase
	(C) Replicates away from replication fork (D) Replicates continuously
3	Lamarckism means:
	(A) To calculate the gene frequency (B) Inheritance of acquired traits
	(C) Descent with modification (D) Natural selection and adaptation
4	Which one is a degenerative disease:
	(A) Source (B) K 1: 1
5	The central cavity of the kidney where urine is collected is called:
	(A) Povemen's severals (D) M
6	(A) Bowman's capsule (B) Vasa recta (C) Pelvis (D) Renal medulla EcoR1 is:
	(A) Used in PCR (B) Used in reverse transcription
7	(C) A viral enzyme (D) A restriction enzyme
'	Most of the increase in the thickness of stem is caused by:
	(A) Secondary xylem (B) Secondary phloem (C) Cork (D) Bark
8	Which of these dominance relations is characterized by the intermediate phenotype of
	neterozygote between the phenotypes of two homozygotes
	(A) Complete dominance (B) Over dominance (C) Partial dominance (D) Co-dominance
9	A grassland present in temperate climate is called:
	(A) Prairies (B) Taiga (C) Savanna (D) Alpine grassland
10	Intercalary meristems in plants get separated from apical meristems by :
	(A) Permanent tissue (B) Cork tissue (C) Vascular cambium (D) Cork cambium
11	Which of these exist in xylem as solid bundles : ity.org
	(A) Collegelesses (B) E''
12	According to Erwin Chargaff: (C) Sclereides (D) Vessels
	(4) 4 . 7. 6 . 6
13	(A) $A+T=C+G$ (B) $A+G=C+T$ (C) $A+C=G+T$ (D) $C+T=A+T$ Alternating diploid sporophyte with haploid separate byte separate byte sporophyte.
1.5	Alternating diploid sporophyte with haploid gametophyte generation in plants is called:
	(A) Diplontic life cycle (B) Haplontic life cycle
14	(C) Diplohaplontic life cycle (D) Haplodiplontic life cycle
14	G-2 of interphase: (A) Lasts for 90 minutes (B) Is post mitotic phase pakcity.org
	() are production of the contract of the cont
	(C) Is pre mitotic phase (D) Is characterized by DNA synthesis
15	Which of these plant hormones inhibits the growth of root and stem during physiological stress:
	(A) Auxin (B) Cytokinin (C) Gibberellins (D) Abscisic acid
16	A probe is used:
	(A) As restriction enzyme (B) In gene therapy
	(C) To search genomic library (D) For the treatment of cystic fibrosis
17	Succession starting in pond is called:
	(A) III
	(A) Halosere (B) Hydrosere (C) Xerosere (D) Derosere

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Roll No.	ahore Board-2022	(To be filled in by the candidate)
BIOLOGY Q.PAPER – II (C	(Academic Sessions 2018 – 20 222-(INTER PA Objective Type) GROUP	RT – II) Time Allowed: 20 Minutes

	PAPER CODE = 8463
lote : F	Four possible answers A, B, C and D to each question are given. The choice which you think is correct,
f	ill that circle in front of that question with Marker or Pen ink in the answer-book. Cutting of Illing
1-1	wo or more circles will result in zero mark in that question. Parthenocarpy is artificially induced by:
1-1	
2	(A) Cytokinins (B) Auxin (C) Ethene (D) Abscisic acid Pairing of homologous chromosomes is called:
2	(D) C
3	(A) Bivalent (B) Tetrad (C) Synapsis (D) Crossing over According to hypothesis, aerobic bacteria developed into mitochondria:
,	The second of th
4	(A) Symbiotic (B) Endosymbiont (C) Mutualistic (D) Both A and B What is our principle source of energy
"	(A) Nuclear energy (B) Geothermal energy
5	(C) Solar energy (D) Tidal energy Bats use for evaporative cooling:
)	
6	(A) Saliva (B) Urine (C) Shivering (D) Both A and B pBR 322 would enable separating out colonies of bacteria in a medium containing:
"	
7	(A) Tetracycline (B) Ampicillin (C) Gel (D) Both A and B Sarcoplasmic reticulum surround each:
1	
8	(A) Myofilament (B) Myofibril (C) Sarcomere (D) Both A and B The position of a gene on the chromosome is called its:
9	(A) Locus (B) Genotype (C) Phenotype (D) All of these Fresh water ecosystem covers less than:
	(A) 10% (B) 05% (C) 02% (D) 01%
10	The epiblast is presumptive:
	(A) Ectoderm (B) Mesoderm (C) Endoderm (D) Both A and B
11	The membrane that bounds vacuole is called : kcity.org
	(A) Tonoplast (B) Symplast (C) Apoplast (D) All of these
12	Chromosomal part which uncoils during interphase is called:
	(A) Euchromatin (B) Heterochromatin (C) Chromatin (D) Both A and B
13	A plant has a growth pattern called :
	(A) Closed growth (B) Open growth
	(C) Primary growth (D) Secondary growth
14	Autosomal non-disjunction may occur in other than:
	(A) 20 th chromosome (B) 21 st chromosome
15	(C) 23 rd chromosome (D) None of these The normal speed of nerve impulse in human is per second:
16	(A) 100 m / sec (B) 120 m / sec (C) 150 m / sec (D) None of these During PCR thermostable enzyme is used named as:
17	(A) DNA polymerase (B) Taq polymerase (C) Both A and B (D) None of these The actual location of place where an organism lives is called:
1	I a ballod

(B) Lithosphere

(A) Biosphere

(C) Atmosphere (D) Habitat 192-222-I-(Objective Type)- 7000 (8463)

a non-evolving population?

Koll No	Lahore Board-2022 (To be filled in by the	candidate)
	(Academic Sessions 2018 – 2020 to 2020 – 2022)	ouriditate)
BIOLO	GY 222-(INTER PART – II) Time	Allowed: 2.40 hours
PAPER	II / F	imum Marks : 68
	SECTION - I	
2. Wri	te short answers to any EIGHT (8) questions:	16
(1)	How animals of hypotonic environment osmoregulate? Give examples	•
(11)	Animals excrete nitrogenous wastes with digestive feces. Give example	e and significance
(iii)	of this adaptation.	
(iv)	How land animals trap a thick layer of air around the body? Give its si What is Ecdysis?	ignificance.
	Differentiate Hinge Joint and Ball and Socket joint by giving example.	
(vi)	What is arthritis?	
	Define seed dormancy. Give its significance.	
	Can we find a fruit without seeds? Give example.	
	What is eutrophication?	
	Differentiate between prairies and savanna.	
	Define soil. Give its basic constituents.	
(xii)	What are industrial effluents? Give their two effects.	
	te short answers to any EIGHT (8) questions:	16
	What happens when an impulse reaches a synaptic knob?	
(ii)	Elaborate habituation as simplest form of learning.	
(iii)	Give negative effects of nicotine.	
(1V)	What is a sex limited trait?	
(v)	State sexual dimorphism in drosophila.	
(VI)	How can there we have a serious set out 2	
(vii)	What are malecular egiseers? How was the above of	
(iv)	Write down the role of lambda phages on a vector	
(x)	Give negative effects of nicotine. What is a sex limited trait? State sexual dimorphism in drosophila. Define linkage group. How gene therapy helps cancer patients? What are molecular scissors? How were they obtained? Write down the role of lambda phages as a vector. Interpret the role of decomposers in recycling.	
(xi)	Compare hydrosere with that of xerosere.	
	What is parasitism? Write down its importance.	
	ite short answers to any SIX (6) questions:	12
(i)	Compare gastrulation and organogenesis.	
(ii)	How inhibitory effect and compensatory effect are caused?	
(iii)		
(iv)	Give the composition of chromosomes. pakcity.org	
(v)	Differentiate between heterochromatin and euchromatin.	
	What is mitotic apparatus?	
	How cancer cells can be distinguished from normal cells?	
	What is modern synthesis or Neo-Darwinism?	
(ix)	What are analogous organs? Give example.	
-1	SECTION – II	
Note:	Attempt any THREE questions.	
	Discuss the temperature classification of animals.	4
	Discuss nitrogen depletion and its remedies.	4
	Compare sclerenchyma cells with collenchyma cells.	4
(b)	What is transcription? How it is carried out in cell?	4
7. (a)		
100 mg	in the body.	4
	Write a note on ozone depletion. pakcity	org 🛞 4
	Describe the phenomena of fruit set and fruit ripening.	4
(b)	Explain the process of crossing over with the help of diagram.	4
	Define and explain embryonic induction.	4
(b)	p+q=1	1900
	Argue that this balance shown in theorem may not vary for	4

192-222-I-(Essay Type)-28000

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(C) Progesterone (D) Gastrin 229-222-II-(Objective Type)- 5500 (8468)

(D) Protozoa

(C) Yeast

Acetabularia is unicellular:

Hormone that suppresses ovulation is:

(A) Fungus

(A) Testosterone

(B) Alga

(B) Oestrogen

16

17

Please visit for more data at: www.pakcity.org

Roll No.	Lahore Board-2021 (To be filled in by the candidate)			
	(Academic Sessions 2017 – 2019 to 2019 – 2021)			
BIOLO				
Q.PAPE	ze an (o sjeme sype)			
	PAPER CODE = 8463			
1	Note: Four possible answers A, B, C and D to each question are given. The choice which you think is correct, fill that circle in front of that question with Marker or Pen ink in the answer-book. Cutting or filling			
	two or more circles will result in zero mark in that question. Nissl's granules are group of:			
1-1	Those of Grant Broad of the			
	(A) Mesosomes (B) Lysosomes (C) Ribosomes (D) Chromosomes			
2	Morphological characteristics of chromosomes are collectively called:			
	(A) Karyotype (B) Neotype (C) Holotype (D) Phenotype			
3	According to endosymbiont hypothesis, the aerobic bacteria developed into:			
	(A) Ribosome (B) Lysosome (C) Mitochondria (D) Plastids			
4	Establishment of new forests, where no forests existed before is called:			
	(A) Reforestation (B) Afforestation (C) Deforestation (D) Desertification			
5	Contractile vacuoles are found in:			
	(A) Plants (B) Fresh water protozoa (C) Land animals (D) Land plants			
6	Locus is:			
	(A) Part of DNA (B) Position of gene (C) Partner of gene (D) Part of gene			
7	The process of moulting is controlled by enzyme called:			
	(A) Ecdysone (B) Aldosteron (C) Oxytocin (D) Androgen			
8	Full cell cycle in yeast cells has length of:			
	(A) 30 minutes (B) 60 minutes (C) 90 minutes (D) 120 minutes			
9	The abiotic component of an ecosystem is:			
	(A) Temperature (B) Producer (C) Consumer (D) Decomposer			
10	Immediately after fertilization, the egg under goes some series of mitotic divisions called:			
	(A) Morulla (B) Blastula (C) Gastrulation (D) Cleavage			
11	In 1 gm of ammonia nitrogen requires how much water for excretion:			
	(A) 50 ml (B) 100 ml (C) 200 ml (D) 500 ml			
12	Hatching period of chick is:			
13	(A) 15 days (B) 20 days (C) 21 days (D) 25 days Which one is the type of asexual reproduction:			
13	1			
14	(A) Apomixes (B) Vernalization (C) Fertilization (D) Phototropism DNA synthesis and chromosomal doubling occurs in :			
14				
15	(A) G ₁ - phase (B) G ₂ - phase (C) G ₀ - phase (D) S - phase			
15	Mature bone cells are called:			
	(A) Osteoblast (B) Osteocytes (C) Osteoclasts (D) Chondrocytes			
16	The enzyme which joins the two pieces of DNA is:			
	(A) DNA ligase (B) DNA polymerase (C) Endo nuclease (D) Lipase			
17	Which of the following is vestigial organ of whole:			
	(A) Gills (B) Leg bones (C) Lungs (D) Pelvis and leg bones			

(C) Lungs (D) Pelvis and leg bones 192-221-I-(Objective Type)- 6250 (8463)

Lahore Board-2021

(To be filled in by the candidate)

(Academic Sessions 2017 - 2019 to 2019 - 2021)

BIOLOGY

221-(INTER PART – II)

Time Allowed: 20 Minutes

Q.PAPER - II (Objective Type)

GROUP - II

Maximum Marks: 17

PAPER CODE = 8464

Note: Four possible answers A, B, C and D to each question are given. The choice which you think is correct, fill that circle in front of that question with Marker or Pen ink in the answer-book. Cutting or filling two or more circles will result in zero mark in that question.

	wo of thore effects will result in zero mark in that question.
1-1	The part of the brain which is best developed in birds:
	(A) Cerebellum (B) Medulla (C) Hippocampus (D) Pons
2	If the centromere is located in the middle of the chromosome it is called:
	(A) Metacentric (B) Sub metacentric (C) Telocentric (D) Acrocentric
3	The actual remains or traces of organisms that lived in the ancient geological times are
	called:
	(A) Analogous organs (B) Homologous organs pakcity.org
	(C) Vestigial organs (D) Fossils
4	The rain fall less than 25 to 50 cm is found in:
	(A) Desert (B) Grassland (C) Temperate deciduous forest (D) Tropical rain forest
5	The blood passing through glomerulus is filtered into:
	(A) Bowman's capsule (B) Ureter (C) Bladder (D) Urethra
6	The Ginkgo plant is:
	(A) Monoecious (B) Dioecious (C) Triecious (D) Polyecious
7	In plant cell turgor pressure is generated by:
	(A) Cell wall (B) Cell membrane (C) Mitochondria (D) Vacuole
8	XYY condition is found in
	(A) Patau (B) Edward (C) Turner (D) Jacobs
9	In Pakistan grassland ecosystem is found in :
10	(A) Kara Koram (B) Shogran (C) Malam Jabba (D) North Kallat
10	In the development of chick the 24 hours embryo is called:
	(A) Morulla (B) Gastrula (C) Blastula (D) Neurula
11	The hormone which actively transport water from filtrate in collecting tubules back to kidney is:
	•
12	(A) Aldosterone (B) ADH (C) Testosteron (D) Oxytocine Healing of fracture and repair of the skin wound is example of:
12	
13	(A) Meiosis (B) Regeneration (C) Development (D) Necrosis The follicle cells after release of the egg are modified to form special structure called:
15	
14	(A) Follicle atresia (B) Corpus luteum (C) Uterus (D) Placenta The stage which may lasts for days, weeks or even years is:
15	(A) Leptotene (B) Zygotene (C) Pachytene (D) Diplotene Which one of the following is a facial bone:
	-
16	(A) Frontal (B) Occipital (C) Vomer (D) Sternum The patients lack a gene that code for trans-membrane carrier of the chloride ions:
17	(A) Cancer (B) ADA (C) SCID (D) Cystic fibrosis Which of the following is biotic factor:
***	(A) Topography (B) Gravity (C) Soil energy (D) Decomposers
	(12) TOPOGRAPHY (D) CHAVITY (C) SOIL CHEES (D) DECOMBOSERS I

Please visit for more data at: www.pakcity.org (8464)

192-219-I-(Objective Type)- 6625 (8463)

(D) Tsetsefly

(D) Xerosere

(C) Butterfly

(C) Ecosere

The enzyme luciferase is produced in an insect called:

(B) Firefly

Primary succession, which starts in a pond ecosystem is termed as :

(B) Hydrosere

16

17

(A) Derosere

Please visit for more data at: www.pakcity.org

229-219-II-(Objective Type)- 3125 (8464)

(D) Fungi

(B) Cyanobacteria (C) Algae

(B) Respiratory tract

(D) Excretory tract

(A) Digestive tract

(A) Bacteria

17

(C) Reproductive tract

In root nodules, the organisms present are:

Lahore Board-2019 (To be filled in by the candidate) (Academic Sessions 2015 - 2017 to 2017 - 2019) Time Allowed: 2.40 hours BIOLOGY 219-(INTER PART – II) Maximum Marks: 68 PAPER - II (Essay Type) GROUP -- II SECTION-I pakcity.org 2. Write short answers to any EIGHT (8) questions : (i) Differentiate between ectotherms and endotherms. (ii) Why the leaves are said to be excretophore? (iii) Differentiate between protonephridia and metanephridia. (iv) Write two characteristics of collenchyma tissuc. (v) Define phototactic movements with example. (vi) How callus is formed? (vii) What are palindromic sequences? (viii) Compare ex-vivo and in-vivo gene therapy. (ix) Write two adaptations for terrestrial ecosystem. (x) Differentiate between alpine and boreal forests. (xi) What is the importance of ozone layer? (xii) Differentiate between deforestation and reforestation. 16 3. Write short answers to any EIGHT (8) questions: Write down two uses of auxins. (ii) How communication across the synapse occurs? (iii) Define habituation. Give one example. (iv) Write down the mechanism of pollen tube evolution in spermatophytes. (v) What do you know about diploid parthenogenesis? (vi) What is oestrous cycle? (vii) Define gene and allele. (viii) Differentiate/autosomes and sex-chromosomes. (ix) What is a multifactorial trait? Give an example. (x) Define the term ecosystem. (xi) What is the difference between ectoparasite and endoparasite? (xii) Define grazing. What is the result of over grazing? 4. Write short answers to any SIX (6) questions : 12 (i) What is the difference between primary and secondary growth? (ii) What is discoidal cleavage? (iii) What is mitotic apparatus? (iv) Differentiate between necrosis and apoptosis. (v) Define Hardy-Weinberg theorem. (vi) What are analogous organs? Give an example. (vii) What is the difference between template strand and sense strand? (viii) What is point mutation? Give an example. (ix) What is membrane invagination hypothesis? SECTION - II Note: Attempt any THREE questions. 5. (a) Describe adaptations for thermoregulation in plants. (b) Describe nitrogen cycle in detail. 4 6. (a) Describe sliding filament model of muscle contraction. 4 (b) Describe the process of translation in prokaryotes. 4 7. (a) Differentiate between instinctive and learning behaviour. 4 (b) Write a note on ozone layer depletion. 4 8. (a) Write a note on vernalisation. 4 (b) Define and explain test cross. 4 9. (a) Write a comprehensive note on aging. (b) Give evidences in support of evolution from comparative embryology and 2,2 molecular biology. 229-219-II-(Essay Type)-12500 Please visit for more data at: www.pakcity.org

Roll No. Lahore Boal	rd-2018 (To be filled in	by the candidate)
(Academic	Sessions 2015 - 2017 & 2016 - 2018	3)
BIOLOGY	218-(INTER PART – II)	Time Allowed: 20 Minutes
Q.PAPER - II (Objective Type)	GROUP – I	Maximum Marks: 17
	PAPER CODE = 8467	

Note: Four possible answers A, B, C and D to each question are given. The choice which you think is correct, fill that circle in front of that question with Marker or Pen ink in the answer-book. Cutting or filling two or more circles will result in zero mark in that question.

	I Have many types of final and did Domyin collect on Colonovas Island :
1-1	How many types of finches did Darwin collect on Galapagos Island:
	(A) 13 types (B) 20 types (C) 25 types (D) 30 types
2	Which of the following chromosomal abnormalities lead to tallness, aggressiveness, mental defect and anti social behaviour:
	Section 1997
2	(A) XXY (B) XO (C) XXXY (D) XYY
3	Which of the following receptors produce the sensation of pain:
	(A) Nociceptors (B) Chemoreceptors pakcity.org
	(C) Pacinian corpuscles (D) Mechanoreceptors
4	A gene with multiple phenotypic effect is called:
	(A) Polygenic (B) Multiple allele (C) Epistatic (D) Pleiotropic
5	Which of the following polymerase synthesize tRNA:
	(A) RNA polymerase – I (B) RNA polymerase – II
	(C) RNA polymerase – III (D) DNA polymerase
6	Animals excreting urea are called:
	(A) Ureotelic (B) Ammonotelic (D) Excretotelic
7	The increase of environmental temperature due to high amount of CO2 is known as:
	(A) Global warming (B) Acid rains (C) Ozone depletion (D) Stone cancer
8	In spermatophytes, important step in land adaptation is the evolution of :
	(A) Seed coat (B) Rollen tube (C) Fruit (D) Flower
9	Meiosis occurs only in
10	(A) Haploid cells (B) Diploid cells (C) Triploid cells (D) Pentaploid cells Bats and humming birds are called:
	Table Cardinal Cardina Cardinal Cardinal Cardinal Cardinal Cardinal Cardinal Cardina Cardi
11	(A) Ectotherms (B) Endotherms (C) Heterotherms (D) Mesotherms
11	The death of the cell due to tissue damage is called:
- 10	(A) Necrosis (B) Phagocytosis (C) Metastasis (D) Apoptosis
12	In plants, turgor pressure is generated by high osmotic pressure of the:
	(A) Vacuole (B) Cytoplasm (C) Tonoplast (D) Cell membrane
13	An association between organisms of different species in which one partner gets benefit and
	other is harmed:
	(A) Mutualism (B) Symbiosis (C) Parasitism (D) Commensalism
14	A collection of bacterial and phage viruses clones containing a particular segment of DNA
	from the source cell is called:
	(A) Recombinant DNA (B) Expressing system
	(C) Genomic library (D) Genome
15	The arctic tundra stretches across Northern North America, Northern Europe and:
	(A) Cyprus (B) Siberia (C) Morocco (D) Nepal
16	Soyabean is an example of, plants:
	(A) Short day (B) Long day (C) Day neutral (D) Day independent
17	In plants movement in response to stimulus of touch is called:
	(A) Phototactic (B) Chemotactic (C) Nyctinasty (D) Thigmotropism

K	on N	(Academic Sessions 2015 – 2017 & 2016 – 2018)	by the candidate)
		OGY 218-(INTER PART – II)	Time Allowed: 2.40 hours
P.	APE	R-II (Essay Type) GROUP-I	Maximum Marks: 68
		SECTION - I Lahore Board-	-2018
2.	W	rite short answers to any EIGHT (8) questions:	16
		What is lithotripsy?	10
		What are xerophytes? Give two adaptations of xerophytes.	
	(iii)	Draw and label the urea cycle.	
	(iv)	What is the difference between tetanus and muscle tetany?	
	(v)	Differentiate the compact bone and spongy bone. Give only two	differences.
	(vi)	Give the name of hormones which are involved in epinasty and h	yponasty.
		Differentiate the internal and external fertilizations.	
1		What is meant by apomixes?	
		What is profundal zone? Give its one character:	
		What are alpine and boreal?	
		What is soil? Give its basic constituents.	
•		What is wild life? Give its important role.	
3.		ite short answers to any EIGHT (8) questions:	16
	(i)	Write two commercial applications of Gibberellins.	
		Differentiate between reflex action and reflex arc.	
		Define feed back mechanism.	
	(iv)	Define law of segregation. What is epistasis? How it differs from dominance? What is the sex limited trait? Give an example. What are restriction enzymes? Give an example.	
		What is epistasis? How it differs from dominance? What is the sex limited trait? Give an example.	
		What are restriction enzymes? Give an example.	
	(iiiv	Define genomic library	
	(ix)	What are two goals of human genome project?	
	(x)	Define biosphere and ecosystem.	
		Differentiate between primary and secondary succession.	
1		Define commensalisms. Give one example.	
		ite short answers to any SIN (6) questions:	12
	(i)	Differentiate between primary and secondary growth.	12
	(ii)	Define growth correlations.	
	(iii)	Differentiate between heterochromatin and euchromatin.	
	(iv)	What is central dogma?	
	(v)	What are mutagens? Give one example.	
	(vi)	What is mitotic apparatus? Give its function.	
((vii)	Write symptoms of Down's syndrome.	
(viii)	What are vestigial organs? Give one example.	
	(ix)		
		SECTION - II	
No	te :	Attempt any THREE questions.	
_			1000
٥.	(a)	Describe in detail excretion in plants.	4
	(b)	Discuss the flow of energy in food chain of an ecosystem.	4
6.	(a)	Discuss arrangement of vertebrae in vertebral column. Also descri	be rib cage. 4
	(b)	Explain the process of DNA replication with the help of a diagram.	
7	(a)	· · · · · · · · · · · · · · · · · · ·	
٠.	(b)	Discuss peripheral nervous system of man. Describe deforestation.	4
	• •	≈‰ pakcity.org ‱	4
8.	(a)	write a note on birth.	4
	(b)	Explain the ABO blood group system.	4
9.	(a)	Describe the phenomenon of growth correlation.	4
		How comparative embryology support the process of evolution?	4
		192-218	-I-(Essay Type)-22000
		Please visit for more data at: www.pa	ikcity.org

Roll No.	Lahore Board-2018 (To be filled in by the candidate)				
	(Academic Sessions 2015 – 2017 & 2016 – 2018)				
BIOLOG					
Q.PAPE	R – II (Objective Type) GROUP – II Maximum Marks: 17 PAPER CODE = 8466				
Note: Four possible answers A, B, C and D to each question are given. The choice which you think is correct,					
fill that circle in front of that question with Marker or Pen ink in the answer-book. Cutting or filling					
two or more circles will result in zero mark in that question.					
1-1	The interphase of meiosis lacks the stage:				
	(A) G_0 (B) G_1 (C) G_2 (D) S				
2	The leaf unrolling is promoted by red light in:				
	(A) Monocot (B) Dicots (C) Ferns (D) Gymnosperms				
3	Which one of the following is endangered in Pakistan:				
	(A) Indian rhino (B) Indus dolphin (C) Cheer pheasant (D) Tiger				
4	A network of closed tubules without internal opening is called:				
	(A) Metanephridium (B) Protonephridium pakcity.org				
5	(C) Nephridium (D) Sub meta nephridium The individuals who born with abnormal organs or body parts is called:				
	(A) Malformed (B) Malignant (C) Falignant (D) Malfunction				
6	A chromosome with equal length of its arms:				
	(A) Acrocentric (B) Telocentric (D) Sub meta centric				
7	The plantigrade animals used to walk on their				
	(A) Digits (B) Tips of toes (C) Soles (D) Belly				
8	The blood vessel supplying the blood to Bowman's capsule is:				
	(A) Afferent arterioles (B) Efferent arterioles (C) Renal artery (D) Renal vein				
9	A gene with a multiple phenotypic effect is :				
	(A) Polygenic (B) Bombay type (C) Monogenic (D) Pleiotropic				
10	The zoological name of leopard cat is:				
	(A) Felis-domestica (B) Felis-leo (C) Felis pardous (D) Felis bengalensis				
11	The average cell cycle in humans is:				
	(A) 12 hours (B) 24 hours (C) 36 hours (D) 48 hours				
12	The part of human limbic system:				
	(A) Amygdala (B) Thalamus (C) Cerebrum (D) Pons				
13	A single chlorine atom can react with ultraviolet rays and destroy as many as ozone				
	molecules :				
	(A) One million (B) Two million (C) One billion (D) Two billion				
14	The corpus luteum secretes a hormone:				
	(A) Oxytocine (B) Progesterone (C) Oestrogen (D) Testosterone				
15	The sclerenchyma has thick secondary walls usually impregnated with:				
	(A) Chitin (B) Pectin (C) Silica (D) Lignin				
16	Cystic fibrosis patients lack a gene that codes for a trans-membrane carrier of :				
17	(A) Sodium ion (B) Potassium ion (C) Carbonate ion (D) Chloride ion The term niche was first proposed by Joseph Grinnell an American:				
1'					
	(A) Embryologist (B) Ecologist (C) Ornithologist (D) Physiologist				

Lahore Board-2018 (To be filled in by the candidate) (Academic Sessions 2015 - 2017 & 2016 - 2018) Time Allowed: 2.40 hours 218-(INTER PART – II) BIOLOGY GROUP - II Maximum Marks: 68 PAPER – II (Essay Type) SECTION - I 16 2. Write short answers to any EIGHT (8) questions : Define anhydrobiosis. (ii) Differentiate between haemodialysis and peritoneal dialysis. (iii) Define counter current multiplier mechanism. (iv) Define antagonistic movement of muscles. (v) Differentiate between ligament and tendon. (vi) Compare hinge joint with ball and socket joint. (vii) What is vernalization? (viii) What is apomixes? (ix) What is grazing? How grazers affect the texture of soil? (x) Where the desert ecosystem are found in Pakistan? (xi) Name two pathogenic and two congenital diseases. (xii) Differentiate between renewable and non-renewable resources. 16 3. Write short answers to any EIGHT (8) questions: (i) What is chlorosis? How it is caused? (ii) Differentiate between active and resting membrane potential. (iii) What is Parkinson's disease? (iv) Define gene linkage and gene linkage groups. (v) What is heterogametic individual? Give example. (vi) Give significance of test cross. (vii) What is gene pharming? (viii) What is palindromic sequence? (ix) Define gene therapy. Name two main methods of gene therapy. (x) Define synecology. (xi) What are lichens? (xii) Differentiate between primary and secondary succession. 12 4. Write short answers to any SIX (6) questions : (i) Define teratology and teratogens. (ii) What are intercalary meristems? Give their role. (iii) Differentiate between sense and anti sense strands of DNA. (iv) Define point mutations. Give one example. (v) Where codon and anticodon are situated? Pakcity.org (vi) How cytokinesis occur in plants? (vii) Write a brief note on turner's syndrome. (viii) Define the term Neo-Darwinism. (ix) What are endangered species? Give two examples from Pakistan. SECTION - II Note: Attempt any THREE questions. 5. (a) Discuss major homeostatic functions of the liver. 4 (b) Define succession. Explain the different stage of xerosere. pakcity.org 4 6. (a) What is the sliding filament model of muscle contraction? What does it explain? 4 4 (b) What hypothesis did beadle and tatum test in their experiment on neurospora? 7. (a) Write any four differences between nervous and chemical coordination. 4 4 (b) Describe wild life as renewable resources. 4 8. (a) Write a note on tissue culture and cloning. 4 (b) Discuss sex-linkage in humans with one example. 4 (a) What is aging? Describe its causes and symptoms. 4 (b) Describe the evidences of evolution by comparative anatomy. Please visit for more data at: www.pakcitv.ord Type)-9000