

This question paper contains 3 printed pages]

V—117—2017

FACULTY OF SCIENCE

B.Sc. (Third Semester) EXAMINATION

OCTOBER/NOVEMBER, 2017

ZOOLOGY

Paper VI

(Genetics)

(MCQ+Theory)

(Saturday, 18-11-2017) :

Time : 2.00 p.m. to 4.00 p.m.

Time—2 Hours

Maximum Marks—40

N.B. :— (i) All questions are compulsory.

(ii) All questions carry equal marks.

(iii) Draw neat and labelled diagrams wherever necessary.

(MCQs)

1. Select the *correct* answer from the given multiple choices : 10

(i) is called as father of genetics.

(a) Aristotle

(b) Mendel

(c) Empedocles

(d) Morgan

(ii) In 1900, Mendel's principles of genetics was rediscovered by

(a) Corren

(b) Tshermak

(c) Devries

(d) All of these

(iii) The factor hypothesis was proposed by

(a) Bateson and Punnet

(b) Swammerdam

(c) Darwin

(d) George H. Shull

P.T.O.

- (iv) The ABO system of blood group was discovered by
- (a) A.S. Wiener (b) Fisher
(c) Bernstein (d) Landsteiner
- (v) The complete linkage is found in the *Drosophila*
- (a) Male (b) Female
(c) Both (a) and (b) (d) None of these
- (vi) The Genic balance theory was formulated by
- (a) M.C. Clug (b) Wilson and Stevens
(c) C.B. Bridges (d) R.A. Emerson
- (vii) The Y linked genes are also called as
- (a) Codogenes (b) Polygenes
(c) Oncogenes (d) Holandric genes
- (viii) In sickle cell anaemia the aminoacid Glutamic acid in β -chain of Hb is replaced by
- (a) Alanine (b) Leucine
(c) Methionine (d) Valine
- (ix) A person with albinism is called as
- (a) Critin (b) Albinos
(c) Idiots (d) Carrier
- (x) The semi conservative method of DNA replication was experimentally proved by
- (a) Watson and Crick (b) Guilfoyle
(c) Meselson and Stahl (d) Rosenberg and Cavalieri

(Theory)

2. Describe the Mendel's Monohybrid cross with a suitable example.

10

Or

Write short notes on :

- (a) Test cross
(b) Rh factor.

WT

(3)

V-117-2017

3. Discuss Mechanism and factors affecting crossing over.

10

Or

Write short notes on :

- (a) Erythroblastosis foetalis
- (b) Alkaptonuria.

4. What are mutations ? Describe the numerical alternations in chromosomes.

10

Or

Write short notes on :

- (a) DNA replication
- (b) Haemophilia.

V-117-2017

This question paper contains 3 printed pages]

W—133—2018

FACULTY OF SCIENCE

B.Sc. (Third Semester) EXAMINATION

OCTOBER/NOVEMBER, 2018

(CBCS/CGPA)

ZOOLOGY

Paper-VI

(Genetics)

(MCQ+Theory)

(Thursday, 25-10-2018)

Time : 2.00 p.m. to 4.00 p.m.

Time—Two Hours

Maximum Marks—40

N.B. :- (i) Attempt *All* questions.

(ii) *All* questions carry equal marks.

(iii) Draw neat and labelled diagrams wherever necessary.

MCQ

10

1. Select *correct* answer from the given multiple choices :

(i) The organism carrying non-identical genes for particular character is called as

(a) Heterozygous

(b) Hybrid

(c) Homozygous

(d) Both (a) and (b)

(ii) The character which disappears in F1 generation is called as

(a) Dominant character

(b) Recessive character

(c) Degenerative character

(d) Aggressive character

(iii) Epistasis means

(a) Stopping

(b) Inhibiting

(c) Both (a) and (b)

(d) Ending

P.T.O.

Theory

2. What is interaction of genes ? Explain complementary factors with a suitable example. 10

Or

Write short notes on :

- (a) Incomplete dominance
- (b) Klinefelter's syndrome

3. What is linkage ? Explain complete linkage in male *Drosophila*. 10

Or

Write short notes on :

- (a) Inheritance of ABO blood group.
- (b) Genetic codes.

4. What is sex linked inheritance ? Explain with reference to colourblindness in man. 10

Or

Write short notes on :

- (a) Holandric genes
- (b) Turner's syndrome.

This question paper contains 3 printed pages]

B—156—2019

FACULTY OF SCIENCE

B.Sc. (Third Semester) EXAMINATION

MARCH/APRIL 2019

(CBCS/CGPA Pattern)

ZOOLOGY

Paper VI

(Genetics)

(MCQ & Theory)

(Thursday, 4-4-2019)

Time : 2.00 p.m. to 4.00 p.m.

Time—2 Hours

Maximum Marks—40

- N.B. :—**
- (i) All questions are compulsory.
 - (ii) All questions carry equal marks.
 - (iii) Draw neat and labelled diagrams wherever necessary.

MCQs

1. Select the *correct* answer from the given multiple choices : 10
- (i) Mendel the father of Genetics was born in a peasant family in Austria in :
 - (a) 1622
 - (b) 1722
 - (c) 1822
 - (d) 1922
 - (ii) The ratio of inhibitory factor in F_2 generation is :
 - (a) 9 : 7
 - (b) 9 : 3 : 4
 - (c) 15 : 1
 - (d) 13 : 3
 - (iii) The persons of AB blood group contain :
 - (a) Antigen A
 - (b) Antigen B
 - (c) Antigen A and B
 - (d) No antigens

P.T.O.

- (iv) The linkage in which the chromosomes do not break and the linked genes inherited together for many generations, is called as :
- (a) Complete linkage (b) Incomplete linkage
(c) Crossing-over (d) None of these
- (v) The female *Drosophila* is :
- (a) Heterogametic (b) Homogametic
(c) Polygametic (d) Metagametic
- (vi) Certain genes which are present in allosomes control the somatic characters, such genes are called :
- (a) Dominant genes (b) Recessive genes
(c) Sex-linked genes (d) Lethal genes
- (vii) The transmission of characters controlled by plasmagones is called :
- (a) Cytoplasmic inheritance (b) Sex-linked inheritance
(c) Straight inheritance (d) Criss-cross inheritance
- (viii) A genetic disease caused by an additional X-chromosome in human male is called :
- (a) Patau's syndrome (b) Down's syndrome
(c) Turner's syndrome (d) Klinefelter's syndrome
- (ix) Phenylpyruvic idiots also known as :
- (a) Phenylketonuria (b) Alkaptonuria
(c) Albinism (d) Sickle cell anaemia
- (x) Who first isolated nucleic acid from the nuclei of pus cells ?
- (a) Watson (b) Miescher
(c) Crick (d) Morgan

Theory

2. Define Genetics and explain Mendel's law of inheritance. 10

Or

Write short notes on :

- (a) Duplicate genes
- (b) Phenylketonuria.

3. Define multiple genes and explain skin pigmentation in man. 10

Or

Write short notes on :

- (a) Factors affecting crossing over
- (b) Turner's syndrome.

4. What is Mutation ? Describe structural alternation in chromosome. 10

Or

Write short notes on :

- (i) Haemophilia
- (ii) Structure of DNA.

This question paper contains 3 printed pages

Y—156—2019

FACULTY OF SCIENCE

B.Sc. (Third Semester) (Backlog) EXAMINATION

OCTOBER/NOVEMBER, 2019

ZOOLOGY

Paper VI

(Genetics)

(MCQ & Theory)

(Thursday, 21-11-2019)

Time : 2.00 p.m. to 4.00 p.m.

Time—2 Hours

Maximum Marks—40

- N.B. :-**
- (i) All questions are compulsory.
 - (ii) All questions carry equal marks.
 - (iii) Draw neat and labelled diagrams wherever necessary.

MCQ

1. Select the correct answer from the given multiple choices : 10
- (i) The crossing of two organisms differing in one character is called :
 - (a) Dihybrid cross
 - (b) Monohybrid cross
 - (c) Interaction of genes
 - (d) Sex-linked inheritance.
 - (ii) Who reported a case of duplicate gene in the common weed, shepherd purse *Bursa bursa pastoris* ?
 - (a) George H. Shull
 - (b) Gregor J. Mendel
 - (c) Bateson and Punnet
 - (d) Gold Schmidt.
 - (iii) Erythroblastosis foetalis disease is also known as :
 - (a) Bleeders disease
 - (b) Hypertrichosis
 - (c) Haemolytic disease
 - (d) Skin disease

P.T.O.

- (iv) The interchange of chromosomal segments between non-sister chromatids are called.....
- (a) Sex linked inheritance (b) Breakage
(c) Linkage (d) Crossing over
- (v) The male Drosophila is :
- (a) Heterogametic (b) Homogametic
(c) Metagametic (d) Polygametic
- (vi) The characters transmitted from father to his grandson through his daughter is called as :
- (a) Straight inheritance
(b) Criss-cross inheritance
(c) Cytoplasmic inheritance
(d) None of the above
- (vii) A chromosomal segment is exchanged between two homologous or non-homologous chromosomes are called :
- (a) Inversion (b) Translocation
(c) Deletion (d) Insertion
- (viii) A genetical disease in human female caused by absence of one X chromosome is called as :
- (a) Turner's Syndrome (b) Down's Syndrome
(c) Klinefelter's Syndrome (d) Patau's Syndrome
- (ix) Albinism an inborn error is due to absence of :
- (a) Phenylalanine (b) Melanin pigment
(c) Homogentisic acid (d) Haemoglobin
- (x) The synthesis of M-RNA from DNA is catalysed by an enzyme is called :
- (a) Endonuclease (b) Lygase
(c) RNA polymerase (d) Trypsin.

Theory

2. What is interaction of genes? Explain complementary factor with suitable example. 10

Or

Write short notes on :

- (a) Incomplete dominance
- (b) Alkaptonuria.

3. Define crossing over. Explain mechanism and significance of crossing over. 10

Or

Write short notes on :

- (a) Rh factor
- (b) Down's syndrome.

4. What is Sex-linked inheritance? Explain it with reference to colour blindness. 10

Or

Write short notes on :

- (a) Sickle cell anaemia
- (b) Structure of t-RNA.

This question paper contains 1 printed page]

X—67—2019

FACULTY OF SCIENCE AND TECHNOLOGY

B.Sc. (Second Year) (Third Semester) (Regular) EXAMINATION

OCTOBER/NOVEMBER, 2019

ZOOLOGY

Paper VI

(Genetics)

(Friday, 29-11-2019)

Time : 2.00 p.m. to 4.00 p.m.

Time—2 Hours

Maximum Marks—40

N.B. :- (i) Attempt All questions.

(ii) Illustrate your answers with suitably labelled diagrams, wherever necessary.

1. What is Interaction of genes ? Explain supplementary factor with suitable example. 15

Or

(A) Explain Mechanism of crossing over. 8

(B) Explain inheritance of A B O blood groups in Man. 7

2. What is Mutation ? Explain structural alteration in chromosomes. 15

Or

(A) Explain Structure and Functions of RNA. 8

(B) Define pedigree analysis. Describe any seven symbols of Pedigree. 7

3. Attempt any *two* of the four. (each of 5 marks.) 10

(a) Back cross.

(b) Erythroblastosis Foetalis

(c) Hypertrichosis

(d) Klinefelter Syndrome.

X—67—2019

1

Name of the Examination: Winter Examination – 2020			
Name of Subject:		Zoology	
Cluster.Code: (as per examination time table):		SD	
Class:	B.Sc. Second Year	Semester:	III
Paper title and Paper no (as examination per time table):		Physiology, Paper no.-VI (New)	
Date : 12/03/2021	Time : 1 Hrs.	Maximum Marks:	40

- N.B. (1) Attempt all questions.
(2) All question Carry equal marks.
(3) Use OMR Answer sheet.**

1.	The Small intestine has three parts. The first part is called	
	A.	Duodenum
	B.	Oesophagus
	C.	Larynx
	D.	None of the above
2.	----- is a protein deficiency disorder	
	A.	Scurvy
	B.	Anaemia
	C.	Kwashiorkor
	D.	None of the above
3.	Doctors will suggest ----- if person is suffering from high blood cholesterol	
	A.	Ghee
	B.	Vegetable oil
	C.	Dalda
	D.	Lard
4.	Nyctalopia can occur due to the deficiency of	
	A.	Vitamin A
	B.	Vitamin C
	C.	Vitamin K
	D.	Vitamin B2
5.	----- stimulates the production of gastric juice in the stomach.	
	A.	Gastrin
	B.	Enterokinase
	C.	Rennin

	D.	Digestion
6.	Which of the following vitamin help in blood clotting?	
	A.	Vitamin A
	B.	Vitamin C
	C.	Vitamin D
	D.	Vitamin K
7.	Which of the following is a water- soluble Vitamin?	
	A.	Vitamin B1
	B.	Vitamin C
	C.	Vitamin B2
	D.	All of the above
8.	Respiration in mature mammalian erythrocytes is -----	
	A.	Linear
	B.	Absent
	C.	Anaerobic
	D.	Aerobic
9.	The greater fissures in humans are present on	
	A.	Right lungs
	B.	Left lungs
	C.	Both right and left lungs
	D.	Not present in the lungs
10.	----- prevents the collapse of the trachea	
	A.	Jugular foramen
	B.	Cartilaginous rings
	C.	Diaphragm
	D.	None of the above
11.	The total number of orifices for outgoing and incoming of urine through the bladder is	
	A.	2
	B.	3
	C.	4
	D.	5
12.	This artery passes blood to the kidney	
	A.	Common iliac
	B.	Cystic
	C.	Renal
	D.	Coeliac
13.	Conversion of excess of amino acids into urea is done in	
	A.	Lungs
	B.	Large intestine
	C.	Liver

	D.	Cloaca
14.	In man kidney is	
	A.	Pronephros
	B.	Mesonephros
	C.	Metanephros
	D.	None of the above
15.	The smallest functional unit of kidney is	
	A.	Nephron
	B.	Collecting tube
	C.	Glomerulus
	D.	Bowmans capsule
16.	What is the main function of blood?	
	A.	Transport
	B.	Protection
	C.	Regulation
	D.	All of the above
17.	Red blood cells are also known as -----	
	A.	Erythrocytes
	B.	Platelets
	C.	Leukocytes
	D.	None of the above
18.	In human being duration of cardiac cycle is	
	A.	0.08 sec
	B.	0.8 sec
	C.	0.5 sec
	D.	8.0 sec
19.	In normal man systolic and diastolic blood pressure is	
	A.	100/80 mm Hg
	B.	120/80 mm Hg
	C.	140/100 mm Hg
	D.	150/90 Hg
20.	Life of RCB is approximately	
	A.	365 days
	B.	120 days
	C.	30 days
	D.	7 days
21.	A particular ECG change observed in Hypokalaemia is	
	A.	ST segment elevation
	B.	T wave
	C.	Tall peaked t waves
	D.	Widening of the

22.	ECG report must consist of the following information	
	A.	Rhythm cardiac axis
	B.	Conduction intervals
	C.	Description of the ST segments, QRS complexes, T- waves
	D.	All of the above
23.	Nissl's granules are found in	
	A.	Nerve cells
	B.	RBC
	C.	WBC
	D.	Platelets
24.	A nerve impulse is first received by -----	
	A.	Axon
	B.	Soma
	C.	Synapse
	D.	Dendrite
25.	Which of the following neurotransmitters is relatively slow-acting?	
	A.	Norepinephrine
	B.	Glycine
	C.	Aspartate
	D.	Glutamate
26.	Which of the following proteins are not found in muscle fibres?	
	A.	Keratin
	B.	Actin
	C.	Tropomyosin
	D.	Troponin
27.	Muscle cells are -----	
	A.	Irregularly shaped
	B.	Cylindrically shaped
	C.	Extremely fragile
	D.	Extremely labile
28.	Skeletal muscle tissues are controlled by?	
	A.	Somatic division
	B.	Parasympathetic division
	C.	CNS
	D.	Sympathetic division
29.	The muscles whose contraction is under our control are	
	A.	Skeletal muscles
	B.	Nerve muscles
	C.	Epidermal muscles
	D.	Xylem muscles
30.	The skeletal muscles are also known as	

	A.	Striated muscles
	B.	Impulsive muscles
	C.	Reflexive muscles
	D.	Adipose muscles
31.	These cells of the testes secrete testosterone	
	A.	Sertoli cells
	B.	Cells of germinal epithelium
	C.	Cells of Leydig or interstitial cells
	D.	Secondary Spermatocytes
32.	Which of these is an accessory reproductive gland in male mammals	
	A.	Inguinal gland
	B.	Prostate glands
	C.	Mushroom shaped gland
	D.	Gastric gland
33.	What are the female gonads?	
	A.	Ovary
	B.	Ova
	C.	Testis
	D.	Testicles
34.	In male reproductive system testicles are inside a sac called as-----	
	A.	Scrotum
	B.	bladder
	C.	Rectum
	D.	Glands
35.	During which cycle day of a typical 28 days menstrual cycle does the follicular phase occur?	
	A.	Cycle days 7-14
	B.	Cycle days 14-28
	C.	Cycle days 1-6
	D.	Cycle days 1-13
36.	What cycle days does the luteal phase occur?	
	A.	Cycle days 15-28
	B.	Cycle days 5-13
	C.	Cycle days 14
	D.	Cycle days 7-14
37.	Sertoli cells are regulated by pituitary hormone known as -----	
	A.	FSH
	B.	LH
	C.	GH
	D.	Prolactin
38.	FSH is produced by -----	

	A.	Thyroid gland
	B.	Anterior pituitary gland
	C.	Posterior pituitary gland
	D.	Gonads
39.	Which part of pancreas produce and secrete insulin?	
	A.	Glomerulus
	B.	Bowman's capsule
	C.	Islets of Langerhans
	D.	Loop of Henle
40.	Which cells produce insulin?	
	A.	Alpha cells
	B.	Beta cells
	C.	Delta cells
	D.	F cells

Faculty of Science
B. Sc. S.Y. (Semester -III) Examination Winter 2020
Subject: Zoology
Paper Title & No.: Genetics - Paper No. VI (Old)
Cluster Code : SD

Date : 12.03.2021

Time : 1 Hour

Maximum Marks : 40

- N.B. (i) Attempt all questions.
(ii) All questions carry equal marks.
(iii) Use OMR Answer Sheet.
- 1) Father of genetics was -----
a) Mendel b) Hugo Devries c) Bateson d) Carreus
 - 2) Back cross is a cross between-----
a) hybrid X dominant parent b) hybrid x recessive parent
c) hybrid X hybrid d) A & B both
 - 3) Test cross is a cross between -----
a) F_1 X dominant parent b) F_1 X recessive parent
c) F_1 X F_1 d) All above
 - 4) The branch of biology which deals with the study of heredity & variation is called ----
a) Evolution b) Genetics c) Ecology d) Mutation
 - 5) Number of characters studied in garden pea by Mendel is -----
a) Two b) Four c) Five d) Seven
 - 6) A cross between two pairs of alleles is called-----
a) Monohybrid cross b) Dihybrid cross
c) Test cross d) Back cross
 - 7) In mice which colour is dominant over both black and albinos?
a) Black b) Albino c) Agouti d) All
 - 8) Which of the following ratio shows complementary gene interaction?
a) 9:7 b) 9:3:4 c) 13:3 d) 15:1
 - 9) When a single character is controlled by two or more pairs of non-allelic genes independently the genes are called-----
a) Duplicate b) Complementary c) Supplementary d) Epistasis
 - 10) Which of the following is an example of non-allelic genic interaction?
a) Complementary factor b) Supplementary factor
c) Epistasis d) All above
 - 11) Multiple alleles control inheritance of -----.
a) Blood groups b) Sickle-cell anemia c) Phenylketonuria d) Colour blindness

- 12) Which of the following blood groups belongs to the category of universal recipient?
 a) A b) B c) AB d) O
- 13) The ABO blood groups are discovered by _____.
 a) Correhen's b) Morgon c) Lowerence d) Landsteiner
- 14) A women with blood group A marries a man with blood group B the possible blood group of offspring is _____.
 a) A, B b) A, B, O c) AB, B d) A, B, AB, O
- 15) Erythroblastosisfoetal is a hemolytic disease of new born for an ___ father and ___ mother.
 a) Rh +ve, Rh +ve b) Rh -ve, Rh -ve
 c) Rh +ve, Rh -ve d) Rh -ve, Rh +ve
- 16) Linkage of hereditary units was discovered by _____.
 a) Sutton b) Bateson c) Muller d) Gaur
- 17) Complete linkage means _____.
 a) Parental and recombinant types exist in equal proportion
 b) Parental type are more than recombinant type
 c) Only recombinant types
 d) Only parental types
- 18) The first person to discover chiasma formation and related process is _____.
 a) Morgan b) Mendel c) FransAlfonsJanssens d) Zeranike
- 19) During crossing over the paired homologous chromosomes forms _____ condition.
 a) Bivalent b) Tetravalent c) Coupling d) Repulsion
- 20) The number of linkage groups in drosophila are _____.
 a) 04 b) 08 c) 07 d) 23
- 21) The word chromosome was coined by _____.
 a) Hofmeister b) Waldeyar c) Robert Brown d) T.H. Morgon
- 22) Which of the following will be colourblind. ?
 a) XY b) X^cX^c c) X^cX d) XX
- 23) Haemophilia are more common in males than females because it has a chromosome.
 a) Recessive character carried by X b) Dominant character carried by Y
 c) Dominant trait carried by X d) Recessive trait carried by X
- 24) The number of Autosomes in the human male and females are _____.
 a) 22 pairs b) 23 pairs c) 44 pairs d) 46 pairs
- 25) A man receives Y-chromosome from his _____.
 a) Mother b) Father c) Both a & b d) None
- 26) Holandric genes are present on _____ chromosome.
 a) X b) Y c) polyene d) lampbrush

- 27) Holandric genes are directly inherited from _____.
- a) Father to daughter b) Father to son
c) Father to granddaughter d) Mother to son
- 28) Sex-linkage was discovered by _____.
- a) T.H. Morgon b) Punnet c) Bateson d) Janseen
- 29) Queen Victoria of the Royal family of Europe was suffered from _____.
- a) Haemophilia b) Colourblindness c) Hypertrichosis d) All above
- 30) When X/A ratio in Drosophila is more than 1.5 it is _____.
- a) Male b) Meta Female c) Intersex d) Meta male
- 31) Mutation is _____.
- a) A change that is inherited b) A change that is not inherited
c) A change affects the parents only d) A change affects F2 generations
- 32) Trisomy in man causes a syndrome called _____ syndrome.
- a) turner's b) klinefelter's c) Down's syndrome d) cat-cry-du
- 33) Condition of sex chromosomes in a male child of Down's syndrome will be _____.
- a) XO b) XX c) XXY d) XY
- 34) A man having klinefelter's syndrome is _____.
- a) Normal fertile female
b) Male with secondary sexual characters of female
c) Female with secondary sexual character of male
d) Normal fertile male
- 35) Sex-chromosomes of birds are ----
- a. ZZ-ZW b. ZZ-WW c. ZZ-ZO d. XX-XY
- 36) Purines are ----
- a. Adenine guanine b. Adenine cytosine
c. Thyamine, uracid d. Thyamineuracid cytosine
- 37) Backbone of DNA consists of
- a. Phosphate & pyrimidine b. Sugar and Pyrimidine
c. Phosphate & sugar d. Purimine& pyrimidine
- 38) Replication of DNA occurs at -----
- a. G-Phase b. S-Phase c. G₂-Phase d. G₀-Phase
- 39) Proof reading during replication of DNA is done by ----
- a. DNA polymerase b. RNA polymerase c. Primare d. Sigma-factor
- 40) The genetic code is found in ----
- a. all prokaryotes b. all eulcaryotes c. all mammals d. All organisms

This question paper contains 2 printed pages!

SB—124—2022

FACULTY OF SCIENCE

B.Sc. (Third Semester) EXAMINATION

MAY/JUNE, 2022

(New Course)

ZOOLOGY

Paper-VII

(Biochemistry)

(Saturday, 18-06-2022)

Time : 02.00 p.m. to 04.30 p.m.

Time— 2½ Hours

Maximum Marks—40

N.B. :— (i) Attempt all questions.

(ii) Illustrate your answers with suitably labelled diagrams wherever necessary.

1. Describe the classification and properties of carbohydrates. 15
- Or*
- (i) Explain the electrochemical properties of water. 8
- (ii) Describe effect of concentration of enzymes and substrate on enzyme activity. 7
2. Describe Glycolysis (EMP) Pathway. 15
- Or*
- (i) Explain Ketogenesis and Ketolysis. 8
- (ii) Describe transamination and deamination. 7

P.T.O.

WT

(0)

8B-124-2022

3. Write notes on any two!

10

- (i) Properties of proteins
- (ii) Lock and key hypothesis
- (iii) Glycogenolysis
- (iv) Disposal of nitrogenous waste

8B-124-2022

9

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(5)

50
12:00 to 1:00

Name of Examination: Winter Examination 2020			
Name of subject		Zoology	
Subject code: (As per examination time table)		B.Sc II/Cluster Code 117	
Class:	B.Sc. Second Year	Semester	III
Paper title and paper no. (As per examination time table)		Paper VII (Old) : Comparative anatomy & physiology	
Time:	01 hour	Maximum Marks:	40

N.B. (1) All questions are compulsory.
 (2) All questions carry equal marks
 (3) Attempt all the questions

- 1) Skin of frog is characterized by the absence of
 (A) Scales (B) Mucous glands (C) Chromatophores (D) None of these
- 2) Hairs in mammals are derivatives of
 (A) Dermis (B) Epidermis
 (C) Mesodermis (D) Endodermis
- 3) Milk glands characteristics feature of
 (A) All vertebrates (B) All mammals
 (C) Placental mammals (D) Fish
- 4) Hoofs and horns are derivatives of
 (A) Cartilage (B) Bone
 (C) Skin (D) Muscle
- 5) Lungs are protected by
 A) Epicardium B) Pericardium
 C) Endometrium D) Diaphragm
- 6) The instrument used for measuring blood pressure is known as
 A) ECG B) Stethoscope
 C) Sphygmomanometer D) EEG
- 7) The coagulation of blood occurs due to
 (A) Destruction of RBC
 (B) Destruction of WBC
 (C) Destruction of lymph
 (D) Aggregation of blood platelets
- 8) Heart beat is
 (A) Induced by hormones
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 (C) Regulated by Vagus nerve complex
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10) Following is an important method for checking the heart rate
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- (A) Destroy the baby's WBCs
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- (C) Destroy the baby's RBCs
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12) Chief Nitrogenous waste in bird is

- (A) Urea (B) Lactic acid
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13) Cholesterol cycle completes in the organ

- (A) Kidney (B) Liver
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14) RBC are Present in

- (A) Rat (B) Man (C) Rabbit (D) All of above

15) Nature of the enzyme is

- (A) Protein (B) Lipid
- (C) Carbohydrate (D) None of the above

16) Which of the following is correct?

- (A) Apoenzyme + Cofactor = Holoenzyme
- (B) Apoenzyme - Cofactor = Holoenzyme
- (C) Apoenzyme - Cofactor = Holoenzyme
- (D) None of the above

17) Functional unit of nervous system

- (A) Neuron (B) Somites
- (C) Synapse (D) Axon

18) Function of Glomerulus is..

- (A) Formation of urine (B) Passage of urine
- (C) Secretion of water (D) Absorption ions

19) Blood is

- (A) Acidic (B) Amphiphilic
- (C) Alkaline (D) Neutral

20) Night blindness causes due to deficiency

- (A) Vitamin A (B) Vitamin B12
- (C) Vitamin B6 (D) Vitamin D

21) Induced fit theory proposed by

- (A) Koshland (B) Charles Leibel
- (C) Buchner (D) Fischer

- 21) Neurotransmission of nerve impulse is
 (A) Electromagnetic (B) Electrochemical
 (C) only Electrical (D) only Chemical
- 22) Blood pigment in mammals is
 (A) Haemoglobin (B) Hemocyanin
 (C) Chlorocruorin (D) Haemoerythrin
- 23) Which of the following vitamin helps in blood clotting?
 (A) Vitamin A (B) Vitamin C
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- 24) Which of the following statement/s is/are correct?
 (A) Enzyme is a biocatalyst
 (B) Enzyme increases the rate of reaction
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- 25) Double circulation is caused by
 (A) The right chamber pushes blood into lungs
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 (C) Heart receives impure blood from the body
 (D) Both (A) and (B)
- 26) Most of the glucose that is filtered through the glomerulus undergoes reabsorption in the :
 (A) Proximal tubule
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- 31) Which part of a neuron receives information from other neurons?
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- 32) Which one of these vitamins is involved in controlling cell differentiation and proliferation?
 (A) Vitamin A (B) Vitamin B12 (C) Vitamin B6 (D) Vitamin E
- 33) Which one of these vitamins may mask the anaemia of vitamin B12 deficiency?
 (A) Biotin (B) Folate
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- 34) Which of the following is usually not found in the urine?
 (A) Magnesium (B) Urea
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- 35) What is the main function of RBCs?
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- 38) Malpighian body is present in
 (A) Skin (B) Kidney
 (C) Testes (D) Ovaries
- 39) The yellow colour of urine is due to
 (A) Uric acid (B) Urea
 (C) Urochrome (D) Melanin
- 40) Certain carbonates and phosphates are removed by
 (A) Skin (B) Liver
 (C) Kidneys (D) None of the above

Name of Examination: Winter Examination 2020			
Name of subject		Zoology	
Subject code: (As per examination time table)		B.Sc II/Cluster Code 117	
Class:	B.Sc. Second Year	Semester	III
Paper title and paper no. (As per examination time table)		Paper VII (Old) : Comparative anatomy & physiology	
Time:	01 hour	Maximum Marks:	40

- N.B. (1) All questions are compulsory.
 (2) All questions carry equal marks
 (3) Attempt all the questions**

1) Skin of frog is characterized by the absence of

- (A) Scales (B) Mucous glands (C) Chromatophores (D) None of these

2) Hairs in mammals are derivatives of

- (A) Dermis (B) Epidermis
 (C) Mesodermis (D) Endodermis

3) Milk glands characteristics feature of

- (A) All vertebrates (B) All mammals
 (C) Placental mammals (D) Fish

4) Hoofs and horns are derivatives of

- (A) Cartilage (B) Bone
 (C) Skin (D) Muscle

5) Lungs are protected by

- (A) Epicardium (B) Pericardium
 (C) Endometrium (D) Diaphragm

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(93)

SD - New

12:00 to 1:00

S.R.T.M.U. Nanded
Faculty of Science and Technology
Examination Summer 2020

ClusterCode :- SD
Sem:-IIIrd
Paper No:-VIIth (New)
Paper Name :-Biochemistry

Class:- B.Sc. (Second Year)
Subject :- Zoology
Date:- 12/03/2021
Time :-1Hrs
Max. Marks:- 40

- I. All Question are compulsory
II. All Question are equal Marks.
III. One marks to each correct answer MCQ

- Q. 1. Carbohydrates are classified into main groups.
a. One b. Two c. Three d. Four
- Q. 2. The main sources of Carbohydrates are
a. Rice b. Wheat c. Roots d. All of the above
- Q. 3. Amino Acids are the basic units of
a. Proteins b. Carbohydrate c. Lipids d. None of these
- Q. 4. Proteins containing lipids are called
a. Lipoproteins b. Phospholipids c. Both A & B d. None of these
- Q. 5. Fatty Acids are the basic unit of and most lipids.
a. Proteins b. Fats c. Carbohydrates d. All of the above
- Q. 6. Fats provide support for the organs in the body
a. Stomach b. Liver c. Heart d. Brain
- Q. 7. The term enzyme was First introduced by
a. Mulder b. Porter c. Krebs d. Kuhno
- Q. 8. Lock & Key hypothesis was proposed by
a. Emil fisher b. Lands Teiner c. Cori d. Cannon
- Q. 9. E-S Complex is also called as
a. Michaelis Complex b. Lewis Complex c. Villiam Complex d. None of these
- Q. 10. Which among the following is the nature of enzyme
a. Carbohydrates b. Proteins c. Lipid d. Vitamine
- Q. 11. Akoshland proposed which model
a. Fluid Mosaic Model b. Induced fit Model
c. Lock & Key Model d. Reflective index Model
- Q. 12. Which of the following statement is incorrect?
a. Enzymes are protein in nature b. Enzymes are Colloidal in nature
c. Enzymes are pherolabile in nature d. Enzymes are inorganic catalyst

- Q 13. The biosynthesis of Glycogen from Glucose is called
 a. Gluconeogenesis b. Glucogenesis c. Glycolysis d. Glucogenolysis
- Q 14. The Glycolysis is also called as
 a. EMP b. EMB c. ATP d. NAD
- Q 15. The end product of Glycolysis is
 a. One molecule of pyruvic acid b. Two Molecule of pyruvic acid
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- Q 16. The synthesis of carbohydrates from proteins & fats is called
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- Q 17. The breakdown of Glycogen to Glucose is called
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- Q 18. The kreb's cycle is also known as
 a. ETS b. Glycolysis c. TCA d. EMP
- Q 19. How many reactions that occur in the ECA Cycle transfer electron from a substrate to an electron accepting enzymes?
 a. 1 b. 2 c. 3 d. 4
- Q 20. Acetyl CoA is a Carbon compound.
 a. 1 b. 2 c. 3 d. 4
- Q 21. In the TCSA Cycle, which of the following combines with acetyl CoA to form a 6 carbon compound?
 a. Oxaloacetate b. Glucose c. Pyruvate d. Thiamine
- Q 22. β - Oxidation was first proposed by
 a. F-knoop b. W. Harpey c. A. Bucner d. None of these
- Q 23. The base source of trans fatty Acid in diet is
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 a. Small intestine b. Stomach c. Both A & B d. All of the above
- Q 28. Which reaction is required for the removal of Alpha Amino group to form Ammonia?
 a. Transamination b. Transcription c. Deamination d. Boath A & C

- Q. 29. What happens during transamination reaction?
 a. Ammonia is liberated b. Amino group is transferred
 c. Amino group is converted d. All of the above
- Q. 30. Which of the following is the only amino acid which can be removed through oxidative Deamination?
 a. Glycine b. Alanine c. Aspartate d. Glutamate
- Q. 31. Which of the following amino acid do not participate in the transamination reaction?
 a. Lysine b. valine c. Threonine d. Both A & C
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- Q. 33. In which form ammonia is disposed in the liver?
 a. Urea b. Uric acid c. Bile d. All of the above
- Q. 34. Urea is synthesized in
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- Q. 35. The ammonia acid that undergoes oxidative deamination at the highest rate is
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- Q. 36. Urea production occurs almost exclusively in
 a. Kidney b. Liver c. Blood d. Urine
- Q. 37. Which is the first amino group entering into urea cycle?
 a. Uric acid b. fatty acids c. Amino acid d. None of these
- Q. 38. Nitrogen atoms of urea produced in the urea cycle are derived from
 a. Ammonia & Aspartic - Acid b. Nitrate c. Nitrite d. Ammonia
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This question paper contains 1 printed page]

X—68—2019

FACULTY OF SCIENCE AND TECHNOLOGY

B.Sc. (Second Year) (Third Semester) (Regular) EXAMINATION

OCTOBER/NOVEMBER, 2019

(CBCS Pattern)

ZOOLOGY

Paper VII

(Comparative Anatomy and Physiology)

(Friday, 29-11-2019)

Time : 2.00 p.m. to 4.00 p.m.

Time—2 Hours

Maximum Marks—40

N.B. :- (i) Attempt All questions.

(ii) Illustrate your answers with suitably labelled diagrams, wherever necessary.

1. Give a comparative account of kidney in vertebrate series. 15

Or

Write notes on :

(a) Classification of Enzymes 8

(b) Lipid digestion 7

2. Describe the structure and working of Human Heart. 15

Or

Write notes on :

(a) Structure of uriniferous tubules 8

(b) Structure of synapse 7

3. Write short notes on any two of the following : 10

(a) Mammalian integument

(b) Vitamin C

(c) Transport of O₂ and CO₂

(d) Cardiac muscle.

X—68—2019

1

This question paper contains 3 printed pages]

B—173—2019

FACULTY OF SCIENCE AND TECHNOLOGY

B.Sc. (Third Semester) EXAMINATION

MARCH/APRIL, 2019

(CBCS/CGPA Pattern)

ZOOLOGY

Paprr-VII (CCZ-III)

(Comparative Anatomy and Physiology)

(MCQ & Theory)

(Monday, 8-4-2019)

Time : 2.00 p.m. to 4.00 p.m.

Time—2 Hours

Maximum Marks—40

- N.B. :-**
- (i) Attempt *all* questions.
 - (ii) All questions carry equal marks.
 - (iii) Use separate (OMR) answer sheet for Q. No. 1.
 - (iv) Illustrate your answers with suitable labelled diagrams wherever necessary.

MCQ

1. Select the correct answer from the given multiple choice questions : 10

(i) Mucous gland is derivative of.....

- (a) Epidermis
- (b) Dermis
- (c) Endodermis
- (d) None of these

(ii) Mammalian Heart is.....

- (a) One chambered
- (b) Three chambered
- (c) Four chambered
- (d) Two chambered

(iii) Vitamin C is called as.....

- (a) Tocopherol
- (b) Ascorbic Acid
- (c) Calciferol
- (d) Retinol

P.T.O.

- (iv) The non-protein part of enzyme is called.....
- (a) Cofactor (b) Apoenzyme
(c) Isoenzyme (d) None of these
- (v) Induced fit theory of enzyme action was suggested by.....
- (a) Sir Hans Krebs (b) M.V.B. Roberts
(c) W.K. Purves (d) D. Koshland
- (vi) Instrument used for measurement of Blood Pressure is.....
- (a) Sphygmomanometer (b) MRI
(c) Haemocytometer (d) Spirometer
- (vii) Gills are specialized structure for.....
- (a) Cutaneous Respiration (b) Aerial Respiration
(c) Aquatic Respiration (d) Pulmonary Respiration
- (viii) The animals excrete the excretory product in the form of uric acid are called as..... animal.
- (a) Uricotelic (b) Ammonotelic
(c) Ureotelic (d) Glucotelic
- (ix) A generalised neuron consist of.....
- (a) Cyton (b) Axon
(c) Dendron (d) All of these
- (x) Junction between two neurons is called.....
- (a) Synapse (b) Axon
(c) Cyton (d) Dendron

Theory

2. Give a comparative account of integument in birds and mammals. 10

Or

Write notes on

- (a) Metanephric Kidney
(b) Composition of urine.

WT

(3)

B-173-2019

3. Give an account of sources, deficiency diseases of fat soluble vitamins. 10

Or

Write notes on :

(a) Carbohydrate digestion

(b) Conduction of Nerve Impulse.

4. Describe in brief the composition and functions of Blood. 10

Or

Write notes on :

(a) Transport of O_2 and CO_2

(b) Cardiac muscle.

This question paper contains 3 printed pages]

B—107—2019

FACULTY OF SCIENCE AND TECHNOLOGY

B.Sc. (Second Year) (Third Semester) EXAMINATION

MARCH/APRIL 2019

(CBCS/CGPA Pattern)

BOTANY

Paper VII

(Histology, Anatomy and Embryology of Angiosperms)

(MCQ & Theory)

(Saturday, 30-3-2019)

Time : 2.00 p.m. to 4.00 p.m.

Time—2 Hours

Maximum Marks—40

N.B. :- (i) Attempt All questions.

(ii) All questions carry equal marks.

(iii) Choose the correct answer for MCQ.

(iv) Draw well-labelled diagram wherever necessary.

MCQ

1. Multiple Choice Questions

10

(i) Apical cell theory was proposed by

(a) Nageli in 1958

(b) Schmidt in 1924

(c) Hanstein in 1868

(d) None of these

(ii) provides strength to the organs and prevents the bending or pulling due to wind.

(a) Parenchyma

(b) Sclerenchyma

(c) Collenchyma

(d) None of these

P.T.O.

- (iii) When protoxylem lies towards outside and metaxylem lies towards the inside is called
- (a) Mesarch (b) Endarch
(c) Exarch (d) None of these
- (iv) Endodermis is present in
- (a) Monocot (b) Dicot
(c) Gymnosperms (d) None of these
- (v) Phloem is present on both sides of xylem in a vascular bundle is called
- (a) Collateral (b) Bicollateral
(c) Concentric (d) None of these
- (vi) Exine of the pollen grain is made up of
- (a) Sporopollenin (b) Callose
(c) Cellulose (d) None of these
- (vii) Fertilization where male gametes in pollen tube enters ovule through integuments is
- (a) Porogamy (b) Syngamy
(c) Mesogamy (d) Chalazogamy
- (viii) The insects are agent of pollination in
- (a) Anemophily (b) Ornithophily
(c) Entomophily (d) Hydrophily
- (ix) Egg apparatus consists of
- (a) Synergids and egg cells (b) Synergids and polar nuclei
(c) Central cells and egg cells (d) Antipodal cells and egg cells

(x) In plants, where two megaspore cells are functional and take part in the development of embryo sac is called type.

(a) Monosporic

(b) Tetrasporic

(c) Trisporic

(d) Bisporic

Theory

2. Describe different types of complex tissues. 10

Or

Write notes on :

(a) Parenchyma

(b) Secondary growth in sunflower stem.

3. Describe internal structure of maize root. 10

Or

Write notes on

(a) Structure of pollen grain

(b) Pollination

4. Describe polygonum type embryo development. 10

Or

Write notes on

(a) Cellular Endosperm

(b) Anatroous Ovule.

This question paper contains 3 printed pages]

W—146—2018

FACULTY OF SCIENCE

B.Sc. (Third Semester) EXAMINATION

OCTOBER/NOVEMBER, 2018

(CBCS/CGPA Pattern)

ZOOLOGY

Paper VII

(Comparative Anatomy and Physiology)

(MCQ & Theory)

(Saturday, 27-10-2018)

Time : 2.00 p.m. to 4.00 p.m.

Time—2 Hours

Maximum Marks—40

- N.B.* :— (i) All questions are compulsory.
(ii) Use separate (OMR) answer-sheet for Question No. 1.
(iii) Draw well labelled diagrams wherever necessary.
(iv) All questions carry equal marks.

MCQ

1. Select the *correct* answer from the given Multiple Choice Questions : 10

- (i) Two-chambered heart is found in :
- | | |
|---------------|-----------|
| (a) Scoliodon | (b) Frog |
| (c) Human | (d) Snake |
- (ii) Outermost layer of mammalian epidermis is :
- | | |
|--------------------------|------------------------|
| (a) Stratum germinativum | (b) Stratum granulosum |
| (c) Stratum lucidum | (d) Stratum corneum |

P.T.O.

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- (iii) All enzymes are :
- (a) Lipid and carbohydrates (b) Carbohydrates only
(c) Protein only (d) Lipids only
- (iv) Fat soluble vitamins are :
- (a) B and C (b) A, D, E, K
(c) B, C, P (d) B complex
- (v) Deficiency of Vitamin D causes :
- (a) Rickets (b) Scurvy
(c) Hypoprothrombinemia (d) Beri-beri
- (vi) Right lung of man consists of :
- (a) One lobe (b) Three lobes
(c) Two lobes (d) Four lobes
- (vii) Largest sized WBCs are :
- (a) Basophils (b) Lymphocytes
(c) Eosinophils (d) Monocytes
- (viii) The animals excrete excretory product in the form of ammonia are called as :
- (a) Ammonotelic (b) Uricotelic
(c) Ureotelic (d) Purinotelic
- (ix) The junction between two neurons is called :
- (a) Giant (b) Synapse
(c) Nephron (d) Cyton
- (x) Smooth muscles are present in the wall of :
- (a) Intestine (b) Stomach
(c) Blood Vessels (d) All of these

Theory

2. Give a comparative account of integument in pisces and amphibia. 10

Or

Write notes on :

- (a) Amphibian Heart
- (b) Structure of Kidney (V.S.).

3. Give an account on various factors affecting enzyme activity. 10

Or

Write notes on :

- (a) Carbohydrate digestion
- (b) Structure of Neurons.

4. Describe the structure and working of Human Heart. 10

Or

Write notes on :

- (a) Transport of O_2 and CO_2
- (b) Skeletal Muscles.

This question paper contains 3 printed pages]

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FACULTY OF SCIENCE

B.Sc. (Third Semester) EXAMINATION

OCTOBER/NOVEMBER, 2017

(CBCS Pattern)

ZOOLOGY

Paper VII

(Comparative Anatomy and Physiology)

(MCQ+Theory)

(Tuesday, 21-11-2017)

Time : 2.00 p.m. to 4.00 p.m.

Time—Two Hours

Maximum Marks—40

- N.B. :— (i) All questions are compulsory.
(ii) Use separate (OMR) answer sheet for Question No. 1.
(iii) Draw well labelled diagrams wherever necessary.
(iv) All questions carry equal marks.

MCQ

1. Select correct answer from the given multiple choice : 10
- (i) Nails, hoofs and horns are derivatives of
- (A) Dermis (B) Epidermis
(C) Endodermis (D) None of these
- (ii) Mammalian kidney is
- (A) Metanephric (B) Pronephric
(C) Opisthonephric (D) Mesonephric
- (iii) Lock and Key hypothesis of enzyme action was proposed by
- (A) Emil Fischer (B) Krebs
(C) Koshland (D) Barnard

P.T.O.

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- (iv) Deficiency of vitamin 'C' causes
- (A) Ricketts (B) Beri-beri
(C) Xerophthalmia (D) Scurvy
- (v) Digestion of carbohydrates occur in
- (A) Stomach (B) Buccal cavity
(C) Intestine (D) All of these
- (vi) Gills are the specialised structure for
- (A) Aquatic respiration (B) - Cutaneous respiration
(C) Pulmonary respiration (D) Aerial respiration
- (vii) In a normal adult man, the blood pressure is
- (A) 100/80 MM. Hg. (B) 120/80 MM. Hg
(C) 100/100 MM. Hg. (D) 100/120 MM. Hg.
- (viii) The animal excrete excretory products in the form of urea are called
- (A) Ammonotelic (B) Uricotelic
(C) Purinotelic (D) Ureotelic
- (ix) Structural and functional unit of nervous system is
- (A) Neuron (B) Medulla
(C) Nephron (D) Cortex
- (x) Cardiac muscles are present in
- (A) Liver (B) Brain
(C) Heart (D) Kidney

Theory

2. Give a comparative account of hearts in vertebrates series.

10

Or

Write notes on :

- (a) Piscean Skin
(b) Composition of Urine.

WT

(3)

V-128-2017

3. Give an account of sources, deficiency diseases of fat soluble vitamins. 10

Or

Write notes on :

- (a) Lipid digestion
- (b) Structure of synapse.

4. What is respiration ? Describe respiratory organism man. 10

Or

Write notes on :

- (a) E.C.G.
- (b) Ultra-structure of skeletal muscle.

This question paper contains 3 printed pages
H-141-2019

30
FACULTY OF SCIENCE
B.Sc. (Fourth Semester) EXAMINATION
MARCH/APRIL, 2019
(CBCS/CGPA Pattern)

ZOOLOGY
Paper VIII
(Genetic Engineering and Evolution)
(MCQ) (Theory)

(Wednesday, 3-4-2019)

Time : 2.00 p.m. to 4.00 p.m.

Time—2 Hours

Maximum Marks—40

N.B. :- (i) Attempt All questions.

(ii) One mark to each correct answered MCQ.

(iii) All questions carry equal marks.

(iv) Draw neat and well labelled diagrams wherever necessary.

(MCQ)

1. Multiple Choice Questions :

(i) The enzyme used in the polymerase chain reaction is

(A) Restriction enzyme (B) Reverse transcriptase

(C) DNA polymerase (D) RNA polymerase

(ii) The cell where the recombinant DNA is allowed to multiply and produce thousands of its copies is called as

(A) Competent host (B) Competent vector

(C) Competent carrier (D) Competent vehicle

(iii) Protein is separated by one of the following technique :

(A) Western blotting (B) Northern blotting

(C) Southern blotting (D) Eastern blotting

P.T.O.

- (iv) was the world's first mammalian clone.
- (A) Molly (B) Dolly
(C) Polly (D) Jolly
- (v) Which of the following techniques is used for forensic purpose ?
- (A) Gene cloning (B) Tissue culture
(C) DNA fingerprinting (D) Organ culture
- (vi) Origin of species was written by :
- (A) Oparin (B) Weismann
(C) Lamarck (D) Darwin
- (vii) Connecting link between reptiles and birds is
- (A) Seymouria (B) Archaeopteryx
(C) Duckbill platypus (D) Ichthyostega
- (viii) Which of the following is a vestigial organ in man ?
- (A) Plica semilunaris (B) Bones of middle ear
(C) Premolar teeth (D) Thumb
- (ix) are regard as the written documents of evolution.
- (A) Embryo (B) Fossil
(C) Vestigial organ (D) Atavism
- (x) The frequency of heterozygotes and homozygotes in a population can be calculated by formula.
- (A) $(p + q) = p^2 + 2pq + q^2$
(B) $(p + q)^2 = p^2 + pq + q^2$
(C) $(p + q)^2 = p^2 + 2pq + q^2$
(D) $(p + q) = p^2 + 2pq + q$

WT

(3)

B-142-2019

(Theory)

2. Describe Southern and Northern blotting techniques. 10

Or

Write notes on :

- (a) SV40
- (b) Similarity of embryos.

3. What is c-DNA library ? Explain the creation of c-DNA library. 10

Or

Write notes on :

- (a) Transgenic animal
- (b) Aquatic adaptation.

4. Describe Lamarck's theory of organic evolution. 10

Or

Write notes on :

- (a) Over production
- (b) Analogous organs.

B-148-2019

3

This question paper contains 3 printed pages

AO-107-2018

FACULTY OF SCIENCE

B.Sc. (Fourth Semester) EXAMINATION

MARCH/APRIL, 2018

(CBCS/COPA)

ZOOLOGY

Paper VIII

(Genetic Engineering and Evolution)

(MCQ+Theory)

(Tuesday, 3-4-2018)

Time : 2.00 p.m. to 4.00 p.m.

Time—2 Hours

Maximum Marks—40

- N.B. :- (i) Attempt All questions.
(ii) One mark to each correct answered MCQ.
(iii) All questions carry equal marks.
(iv) Draw neat and well labelled diagrams wherever necessary.

(MCQ)

1. (i) Genetic engineering is 10
(a) Study of genes (b) Study of chromosomes
(c) Manipulation of genes. (d) Surgery
(ii) What are the three basic steps of PCR ?
(a) Denature, anneal and strand displacement
(b) Denature, anneal and extension
(c) Strand displacement, synthesis and release
(d) Reverse transcription, anneal and extend
(iii) *m*-RNAs is separated by one of the following techniques :
(a) Southern blotting (b) Western blotting
(c) Northern blotting (d) Eastern blotting

P.T.O.

- (vi) is the most suitable host for construction of cDNA library.
- (a) Tiphage (b) Agaricus
(c) Pseudomonas species (d) *E. coli*
- (v) Transplantation of animal organs in human system is called
- (a) Xenotransplantation (b) Replication
(c) Mutation (d) Modification
- (iv) Animals produce young ones by reproduction, this is called
- (a) Prodigality of production (b) Propagation
(c) Hybridization (d) Conjugation
- (iii) The best example of disuse of organs is
- (a) Limbs in Snake
(b) Webbed toes in duck
(c) Neck and limbs in giraffe
(d) Unguligrade foot in horse
- (ii) Similarity of structure connected with similarity of function is termed as
- (a) Homology (b) Analogy
(c) Cytology (d) Ecology
- (i) The golden age of reptiles is designated as era.
- (a) Mesozoic (b) Proterozoic
(c) Cenozoic (d) Paleozoic
- (x) The animals living inside burrows are called animals.
- (a) Aquatic (b) Fossorial
(c) Volant (d) None of these

(Theory)

2. What is cloning vector ? Explain in detail plasmid and bacteriophage vectors. 10

Or

Write notes on :

- (a) Restriction endonucleases
(b) Homologous organs.

3. What is transgenesis ? Describe transgenic animal with examples. 10

Or

Write notes on :

- (a) Application of DNA fingerprinting
(b) Volant adaptation.

4. Describe Hugo De Vries theory of evolution. 10

Or

Write notes on :

- (a) Struggle for existence
(b) Hardy-Weinberg law.

This question paper contains 8 printed pages

AO—107—2018

FACULTY OF SCIENCE

B.Sc. (Fourth Semester) EXAMINATION

MARCH/APRIL, 2018

(CBCS/CGPA)

ZOOLOGY

Paper VIII

(Genetic Engineering and Evolution)

(MCQ+Theory)

Monday, 3-4-2018)

Time—2 Hours

Time : 2.00 p.m. to 4.00 p.m.

Maximum Marks—40

8. — (i) Attempt All questions.
(ii) One mark to each correct answered MCQ.
(iii) All questions carry equal marks.
(iv) Draw neat and well labelled diagrams wherever necessary.

(MCQ)

- (i) Genetic engineering is 10
(a) Study of genes (b) Study of chromosomes
(c) Manipulation of genes (d) Surgery
- (ii) What are the three basic steps of PCR ?
(a) Denature, anneal and strand displacement
(b) Denature, anneal and extension
(c) Strand displacement, synthesis and release
(d) Reverse transcription, anneal and extend
- (iii) *m*-RNAs is separated by one of the following techniques :
(a) Southern blotting (b) Western blotting
(c) Northern blotting (d) Eastern blotting

P.T.O.

- (iv) is the most suitable host for construction of c-DNA library.
- (a) Tiphage (b) Agaricus
(c) Pseudomonas species (d) *E. coli*
- (v) Transplantation of animal organs in human system is called
- (a) Xenotransplantation (b) Replication
(c) Mutation (d) Modification
- (vi) Animals produce young ones by reproduction, this is called
- (a) Prodigality of production (b) Propagation
(c) Hybridization (d) Conjugation
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(d) Unguligrade foot in horse
- (viii) Similarity of structure connected with similarity of function is termed as
- (a) Homology (b) Analogy
(c) Cytology (d) Ecology
- (ix) The golden age of reptiles is designated as era.
- (a) Mesozoic (b) Proterozoic
(c) Cenozoic (d) Paleozoic
- (x) The animals living inside burrows are called animals.
- (a) Aquatic (b) Fossorial
(c) Volant (d) None of these

(Theory)

2. What is cloning vector ? Explain in detail plasmid and bacteriophage vectors. 10

Or

Write notes on :

- (a) Restriction endonucleases
- (b) Homologous organs.

3. What is transgenesis ? Describe transgenic animal with examples. 10

Or

Write notes on :

- (a) Application of DNA fingerprinting
- (b) Volant adaptation.

4. Describe Hugo De Vries theory of evolution. 10

Or

Write notes on :

- (a) Struggle for existence
- (b) Hardy-Weinberg law.

This question paper contains 3 printed pages]

V—122—2017

FACULTY OF SCIENCE

B.Sc. (Fourth Semester) EXAMINATION

NOVEMBER/DECEMBER, 2017

ZOOLOGY

Paper IX

(Endocrinology, Histology and Biochemistry)

(Monday, 20-11-2017)

Time : 2.00 p.m. to 4.00 p.m.

Time—Two Hours

Maximum Marks—40

- N.B. :—*
- (i) All questions are compulsory.
 - (ii) All questions carry equal marks.
 - (iii) Draw well labelled diagrams wherever necessary.
 - (iv) Use separate answer-sheet (OMR) for Question No. 1.

MCQ

1. Select the *correct* answer from the given multiple choice : 10
- (i) Life saving hormones are secreted by
 - (a) Pituitary
 - (b) Thyroid
 - (c) Adrenal
 - (d) Pineal
 - (ii) Deficiency of Insulin causes :
 - (a) Thyroidism
 - (b) Goiter
 - (c) Diabetes mellitus
 - (d) None of these
 - (iii) Bleeding phase of menstrual cycle is called :
 - (a) Menstrual cycle
 - (b) Menstruation
 - (c) Menses
 - (d) Menarch
 - (iv) The functional unit of Testes are known as
 - (a) Collecting tubules
 - (b) Rate testes
 - (c) Uriniferous tubules
 - (d) Seminiferous tubule

P.T.O.

- (v) Glucose is stored in the form of glycogen in
- (a) Pancreas (b) Bone
(c) Kidney (d) Liver
- (vi) Sertoli cells are responsible for
- (a) Nourishment of spermatozoa
(b) Sperm producing cells
(c) Transportation of sperms
(d) None of the above
- (vii) Gluconeogenesis means
- (a) Synthesis of protein from carbohydrates
(b) Synthesis of carbohydrates from protein and fats
(c) Synthesis of fats from fatty acids
(d) Synthesis of amino acids from carbohydrates
- (viii) The removal of amino group from the amino acid is called
- (a) Deamination (b) Transamination
(c) Decarboxylation (d) Transmethylation
- (ix) Ornithine cycle starts with the combination of
- (a) CO_2 and NH_2 (b) CO_2 and NH_3
(c) CO_2 and NH_4 (d) CO_2 and H_2O
- (x) The process of formation of Ketone bodies known as
- (a) Ketosis (b) Ketogenesis
(c) Ketolysis (d) None of these

Theory

2. Describe the structure and function of Thyroid gland.

10

Or

Write notes on :

- (a) Menstrual cycle
(b) Ornithine cycle

WT

(3)

V-122-2017

3. Describe the histological structure of liver.

10

Or

Write notes on :

(a) T.S. of ovary

(b) β -oxidation

4. Describe in detail Kreb's cycle.

10

Or

Write notes on :

(a) Gluconeogenesis

(b) Ketolysis

This question paper contains 3 printed pages]

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FACULTY OF SCIENCE

B.Sc. (Fourth Semester) EXAMINATION

MARCH/APRIL, 2018

(CBCS/CGPA)

ZOOLOGY

Paper IX

(Endocrinology, Histology and Biochemistry)

(MCQ+Theory)

(Thursday, 5-4-2018)

Time : 2.00 p.m. to 4.00 p.m.

Time-2 Hours

Maximum Marks-40

- N.B. :- (i) All questions are compulsory.
(ii) Use separate answer-sheet (OMR) for Question No. 1.
(iii) Draw well-labelled diagrams wherever necessary.
(iv) All questions carry equal marks.

(MCQ)

1. Select the *correct* answer from the given multiple choice :

10

- (i) The master endocrine gland is
- | | |
|---------------|---------------------------|
| (a) Pituitary | (b) Thyroid |
| (c) Adrenal | (d) Islet's of Langerhans |
- (ii) Hyposecretion of thyroxine in children leads to
- | | |
|--------------|----------------|
| (a) Goitre | (b) Cretinism |
| (c) Dwarfism | (d) Acromegaly |
- (iii) The adrenal gland is also known as
- | | |
|------------------|----------------------|
| (a) Master gland | (b) Suprarenal gland |
| (c) Sex gland | (d) Suproptic gland |

P.T.O.

- (iv) Kupffer's cells in mammals are present in the
- (a) Spleen (b) Liver
(c) Pancreas (d) Lung
- (v) Carpus luteum is a part of
- (a) Mid brain (b) Mammalian lung
(c) Hind brain (d) Mammalian ovary
- (vi) The structural and functional unit of testis are known as
- (a) Seminiferous tubule (b) Rete testis
(c) Collecting tubule (d) Uriniferous tubule
- (vii) Krebs's cycle is also known as
- (a) Utric acid cycle (b) Urea cycle
(c) Tricarboxylic acid cycle (d) Nitric acid cycle
- (viii) The biosynthesis of glycogen from glucose is called
- (a) Gluconeogenesis (b) Glycolysis
(c) Glycogenesis (d) Glycogenolysis
- (ix) Ornithine cycle occurs in
- (a) Stomach (b) Intestine
(c) Testis (d) Liver
- (x) The oxidation of ketone bodies to CO_2 and water is known as
- (a) Ketogenesis (b) Ketolysis
(c) Ketosis (d) None of these

(Theory)

2. Describe the structure and functions of adrenal gland.

10

Or

- (a) Hormones of adenohypophysis
(b) Ornithine cycle.

WT

(3)

AO—118—2018

3. Describe the histological structure of intestine.

10

Or

(a) T.S. of testis

(b) β -oxidation.

4. Describe in detail Glycolysis.

10

Or

(a) Glycogenesis

(b) Ketolysis.

FACULTY OF SCIENCE

B.Sc. (Second Year) (Fourth Semester) EXAMINATION

MARCH/APRIL, 2019

(CBCS/CGPA Pattern)

ZOOLOGY

Paper IX

(Endocrinology, Histology and Biochemistry)

(MCQ+Theory)

(Friday, 5-4-2019)

Time : 2.00 p.m. to 4.00 p.m.

Time—2 Hours

Maximum Marks—40

- N.B. :— (i) All questions are compulsory.
(ii) Use separate-sheet (OMR) for Question No. 1.
(iii) Draw well-labelled diagrams wherever necessary.
(iv) All questions carry equal marks.

(MCQ)

1. Select the correct answer from the given multiple choice :

10

(i) Oxytocin hormone is secreted by gland.

- (A) Adrenal (B) Ovary
(C) Thyroid (D) Pituitary

(ii) Exophthalmic goitre is caused due to

- (A) Hypofunction of Thyroid
(B) Hyperfunction of Thyroid
(C) Hypofunction of Parathyroid
(D) Hyperfunction of Parathyroid

(iii) Hypofunction of adrenal cortex leads to

- (A) Addison's disease (B) Cretinism
(C) Dwarfism (D) Sterility

P.T.O.

- (iv) In liver, the wall of sinusoids contains special cells are called as
- (A) Kupffer's cells (B) Polygonal cells
(C) Hepatic cells (D) Globlet's cells
- (v) In testis, the wall of seminiferous tubules is lined by cells.
- (A) Sertoli cells (B) Germinal cells
(C) Both (A) and (B) (D) None of these
- (vi) Structural and functional units of kidney is
- (A) Nephron (B) Sinusoids
(C) Seminiferous tubule (D) Graffian follicles
- (vii) Glucose is stored in the form of glycogen in
- (A) Pancreas (B) Bone
(C) Kidney (D) Liver
- (viii) Synthesis of carbohydrates from protein and fats is called
- (A) Glycolysis (B) Glycogenolysis
(C) Gluconeogenesis (D) Glycogenesis
- (ix) The transfer of an amino group from one amino acid to keto-acid is called
- (A) Deamination (B) Transamination
(C) Ornithine cycle (D) Uric acid cycle
- (x) Excretion of abnormally high amount of ketone bodies in urine is known as
- (A) Ketonemia (B) Ketolysis
(C) Ketogenesis (D) Ketonuria

(Theory)

2. Describe the structure and function of Thyroid gland.

10

Or

- (a) Menstrual cycle
(b) Transamination.

WT

3. Describe the histological structure of mammalian testis. 10

Or

(a) T.S. of Liver

(b) Ketogenesis.

4. Describe in detail glycolysis. 10

Or

(a) Gluconeogenesis

(b) β -oxidation.

This question paper contains 3 printed pages|

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FACULTY OF SCIENCE

B.Sc. (Fourth Semester) (Backlog) EXAMINATION

OCTOBER/NOVEMBER, 2019

ZOOLOGY

Paper IX

(Endocrinology, Histology and Biochemistry)

(MCQ+Theory)

(Friday, 22-11-2019)

Time : 2.00 p.m. to 4.00 p.m.

Time— Two Hours

Maximum Marks—40

- N.B. :—**
- (i) All questions are compulsory
 - (ii) Use separate answer-sheet (OMR) for Question No. 1.
 - (iii) Draw well-labelled diagrams wherever necessary.
 - (iv) All questions carry equal marks.

(MCQ)

1. Select the correct answer from the given multiple choice questions : 10
- (i) The chemical substance secreted by endocrine gland and released into blood is/are :
 - (a) Enzymes
 - (b) Vitamins
 - (c) Hormones
 - (d) Bile
 - (ii) Pituitary gland attached to the brain by.....
 - (a) Hypophysis
 - (b) Neurohypophysis
 - (c) Pituitary stalk
 - (d) Adenohypophysis
 - (iii) The menstrual cycle is.....
 - (a) Ornithine cycle
 - (b) Female sexual cycle
 - (c) Oestrous cycle
 - (d) Male sexual cycle

P.T.O.

- (iv) Intestine is characterised by.....
- (a) Fundic gland (b) Cardiac gland
(c) Villi (d) Pyloric gland
- (v) In liver, the wall sinusoids contains special cells are called as.....
- (a) Hepatic cells (b) Kuffer's cells
(c) Epithelial cells (d) Beta cells
- (vi) The testis is covered by a fibrous capsule called.....
- (a) Seminiferous tubules (b) Sertoli cells
(c) Interstitial cells (d) Tunica albuginea
- (vii) Transamination means.....
- (a) Conversion of amino acid into nucleic acid
(b) Conversion of nucleic acid into enzymes
(c) Conversion of amino acid into glycerol
(d) Conversion of amino acid into keto acid
- (viii) The end product of glycolysis is :
- (a) Pyruvic acid (b) Numeric acid
(c) Citric acid (d) Acetic acid
- (ix) Deamination means.....
- (a) Removal of amino group from amino acid
(b) Removal of amino group from protein
(c) Both (a) and (b) (d) None of the above
- (x) The process of formation of ketone bodies is known as.....
- (a) Ketolysis (b) Ketonemia
(c) Ketogenesis (d) Ketosis

WT

(3)

Y—163—2019

(Theory)

2. Describe the structure and functions of Thyroid gland. 10

Or

Write notes on :

(a) Hormones of adrenal gland.

(b) Deamination.

3. Describe the histological structure of kidney. 10

Or

Write notes on :

(a) T.S of pancreas

(b) Ketolysis.

4. Describe in detail Kreb's cycle. 10

Or

Write notes on :

(a) Glycogenolysis

(b) Transamination.

This question paper contains 1 printed page.

SB—135—2022

FACULTY OF SCIENCE & TECHNOLOGY
B.Sc. (Second Year) (Fourth Semester) EXAMINATION

MAY/JUNE, 2022

(New Pattern)

ZOOLOGY

Paper-IX

(Evolutionary Biology and Genetic Engineering)

(Monday, 20-06-2022)

Time : 2.00 p.m. to 4.30 p.m.

Maximum Marks—40

Time— 2½ Hours

N.B. :— (i) Attempt All questions.

(ii) Illustrate your answer with suitable labelled diagram, wherever necessary.

1. Describe Darwin's theory of organic evolution. 15

Or

 - (a) Describe palaeontological evidence of evolution. 8
 - (b) Describe Biological species concept. 7
2. Describe transgenesis and transgenic animals. 15

Or

 - (a) RNA Structure. 8
 - (b) Genetic Code. 7
3. Attempt any *two* of the following : 10
 - (a) Embryological Evidence of evolution
 - (b) Mass extinction causes
 - (c) DNA structure
 - (d) Gel-Electrophoresis.

SB—135—2022