

Total No. of Printed Pages:2

SUBJECT CODE NO:- L-2019
FACULTY OF SCIENCE
B.Sc. T.Y. (Sem-V) Examination Oct/Nov 2018
Zoology Paper- XV
(Ecology)

[Time: 1:30 Hours]

[Max.Marks:50]

- N.B Please check whether you have got the right question paper.
- i) Attempt all questions.
 - ii) Illustrate your answer with suitable labelled diagram.

Q.1 What is commensalism? Describe its types with suitable examples 20

OR

What is ecology? Explain its basic concept and terminology.

Q.2 Give an account of characteristics of community. 20

OR

Write a short note on any four of the following

- (a) Productivity
- (b) Population density
- (c) Food Web
- (d) Age distribution
- (e) Desert ecosystem
- (f) Natality

Q.3 Select and write correct answer from the given alternatives in each sub-question. 10

(1) The competition exclusion principle is proposed by _____
 (a) E. Haeckel (b) Odum (c) Gauze (d) Clarke

(2) The range of temperature within which living organisms carry on their life activities is known as _____.
 (a) Ecoton (b) Biokinetic zone (c) Niche (d) Epilimnion

(3) Branch of ecology concerned with the study of individual organism is _____
 (a) Autecology (b) Palaeoecology (c) Synecology (d) Biocoenosis

(4) The carrying capacity of a population is determined by its _____
 (a) Natality (b) Mortality (c) Population growth rate (d) Limiting resources

- (5) The term niche was first coined by _____.
(a) Grinnell (b) c. Elton (c) Odum (d) Clement
- (6) Final terminal community in equilibrium stage is called as _____.
(a) Dune (b) Crest (c) Apex (d) Climax
- (7) Which one of the following is not a functional unit of an ecosystem
(a) Productivity (b) Energy flow (c) Stratification (d) Decomposition
- (8) Trophic levels in ecosystem is formed by _____.
(a) Consumers (b) Organisms linked in food chain (c) Producers (d) None
- (9) The salinity of marine water is rather constant that is about _____.
(a) 1.7% (b) 17% (c) 35% (d) 3.5%
- (10) The pyramid of energy in any ecosystem is _____.
(a) Always upright (b) Inverted (c) Multidirectional (d) All above

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SUBJECT CODE NO:- L-2020
FACULTY OF SCIENCE
B.Sc. T.Y. (Sem-V) Examination Oct/Nov 2018
Elective Paper Zoology Paper-XVI
(A) Fishery Science - I

[Time: 1:30 Hours]

[Max.Marks:50]

- N.B Please check whether you have got the right question paper.
- i) Attempt all questions.
 - ii) Illustrate your answer with suitable labelled diagram.

Q.1 Give detail account of the general characters and outline classification of fishes 20

OR

Write in detail about status of fresh water fisheries (past, present, future) 20

Q.2 Explain in detail Mackerel fishery 20

OR

Write short Notes on any four of the following 20

- a) Chilika lake fisheries
- b) Ribbon fish fisheries
- c) Trout fisheries
- d) Mullet fish fisheries
- e) Role of chlorophyll pigment in remote sensing
- f) Pomfret fisheries

Q.3 Select and Write correct answer from the given alternatives. 10

1. Cod liver oil is rich in
 (a) Calcium (b) Iron (c) Vitamin A (d) Vitamin D
2. The common name of *Sardinella longiceps* is
 (a) Mackerel (b) Trout (c) Bombay duck (d) Oil Sardine
3. Pulicat lake is.....
 (a) Brackish water lake (b) Marine Water lake (c) fresh water lake (d) a and b
4. Study of fishes means
 (a) Ichthyology (b) Lepidopteriology (c) Ichthyology (d) Genecology
5. Collection of fish from natural habitats called.....
 (a) Culture fishery (b) Capture fishery (c) Shell fish fisheries (d) fin fish fisheries
6. Jayakwadi Reservoir is constructed on river.
 (a) Koyana (b) Bhima (c) Godavari (d) Krishna

7. Brackish water is.....
 - (a) Saline water (b) Ecotone of marine and fresh water habitat
 - (b) Rich in nutrients (d) all the above
8. National fisheries Development board is situated at
 - (a) Delhi (b) Mumbai (c) Chennai (d) Hyderabad
9. Objectives of remote sensing technology are
 - (a) To provide data oceanic parameters to downstream user.
 - (b) To develop model for stimulation.
 - (c) To predict the Oceanic process
 - (d) All the above.
10. The common name of clarias batrachus.
 - (a) Milk fish (b) Ribbon fish (c) Magur (d) Sea bass

OR

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SUBJECT CODE NO:- L-2020
FACULTY OF SCIENCE
B.Sc. T.Y. (Sem-V) Examination Oct/Nov 2018
Elective Paper Zoology Paper-XVI
(B) Animal Culture- I

[Time: 1:30 Hours]

[Max.Marks:50]

Please check whether you have got the right question paper.

N.B

- i) Attempt all questions
- ii) Illustrate your answer with suitable labelled diagram.

Q.1 Write an essay on systematic position and distribution of different honey bees 20

OR

Write in detail about polymorphism and colony organization in honey bees. 20

Q.2 Write an essay on life cycle of honey bees 20

OR

Write short note on any four of the following : 20

- a) Cast differentiation
- b) Nesting behavior
- c) Division of work
- d) Pollination by honey bees
- e) Fungal diseases of honey bees
- f) Comb construction in bees

Q.3 Select and Write correct answer from the given alternative in each sub questions. 10

1. The Queen is _____ in honey bees
 (a) Fertile male (b) Fertile Female (c) Infertile female (d) infertile male.
2. Larva of honey bee is also known as _____.
 (a) Grub (b) adult (c) male (d) pupa
3. Mass flying of honey bees leaving hives is known as _____.
 (a) absconding (b) dancing (c) Fanning (d) Swarming
4. Acarine disease in honey bees is caused due to _____.
 (a) Parasitic mite (b) Predators (c) Nosema (d) Amoeba
5. European foul brood in honey bees is caused due to _____.
 (a) Virus (b) bacteria (c) Protozoa (d) Porifera
6. Protein content of honey is _____.
 (a) 3- 4% (b) 5- 6% (c) 1- 2% (d) 9-10%

7. Royal Jelly is secreted by _____
(a) drone (b) Queen (c) grub (d) Worker
8. Bee Venom is also called as _____
(a) Api toxin (b) meta toxin (c) B-toxin (d) para toxin
9. Royal Jelly is fed to the Larva which is going to develop into _____
(a) Drone (b) Queen (c) Worker (d) Pupa
10. Bee glue contains average _____ resin and balsam.
(a) 40% (b) 45% (c) 55% (d) 65%.

OR

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SUBJECT CODE NO:- L-2020
FACULTY OF SCIENCE
B.Sc. T.Y. (Sem-V) Examination Oct/Nov 2018
Elective Paper Zoology Paper-XVI
(C) Entomology – I

[Time: 1:30 Hours]

[Max.Marks:50]

Please check whether you have got the right question paper.

N.B

- i) Attempt all questions.
- ii) Illustrate your answer with suitable labelled diagram.

Q.1 Describe general characters of order Lepidoptera and Diptera with suitable example 20

OR

Explain systematic position and external morphology grasshopper. 20

Q.2 Write an essay on Apiculture. 20

OR

Write short notes on any four of the following 20

- (a) Mosquito
- (b) Preservation of Insect
- (c) Economic importance of lac.
- (d) Holometabolus metamorphosis
- (e) Life cycle of silk worm
- (f) Pediculus

Q.3 Select and write correct answer from the given alternatives in each sub questions. 10

1. Lac is secreted by the _____
 (a) Male lac insect (b) Female lac insect (c) Both (d) None
2. Govt. of India constituted the central silk Board in _____
 (a) 1960 (b) 1948 (c) 1949 (d) All of these
3. The queen of Indian bee is capable of laying upto _____ eggs daily.
 (a) 1000 (b) 2000 (c) 500 (d) None
4. Pebrine disease cause to _____
 (a) Silk worm (b) Bee worm (c) Lac worm (d) None
5. Ovipositor is Found in _____
 (a) Male (b) Female (c) Queen (d) Drone
6. Honey is collected in _____
 (a) Honey comb (b) Broad Chamber (c) Super (d) Bottom brood

7. Butter Fly belong to Order _____
(a) Lepidoptera (b) Hymenoptera (c) Coleopteran (d) Diptera
8. Moulting is called _____
(a) Instar (b) Pupa (c) Naids (d) Ecdysis
9. Product of Silkworm _____
(a) Honey (b) Wax (c) Silk (d) All of these
10. Ecdysone hormone is related to _____
(a) Fertilization (b) Moulting (c) Oviposition (d) All above

OR

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SUBJECT CODE NO:- L-2020
FACULTY OF SCIENCE
B.Sc. T.Y. (Sem-V) Examination Oct/Nov 2018
Elective Paper Zoology Paper-XVI
(D) Parasitic Protozoa and Helminthes-I

[Time: 1:30 Hours]

[Max.Marks:50]

Please check whether you have got the right question paper.

N.B

- i) Attempt all questions.
- ii) Illustrate your answer with suitable labelled diagrams.

- Q.1 Define parasitism. Describe the types of parasites 20
OR
 Explain in detail life cycle of P. Vivax 20
- Q.2 Describe pathogenicity, Treatment and control measures of trypanosome gambiense 20
OR
 Write short notes on any four of the following 20
- a) Trophozoite of Trichomonas
 - b) Host parasite relationship
 - c) Exflagellation
 - d) E. gingivalis
 - e) Pathogenicity of Giardia
 - f) Sporocyst of Eimeria
- Q.3 Select and write correct answer from the given alternatives in each sub questions. 10
1. _____ was coined the phylum name 'protozoa'
 (a) Robert Grant (b) Gold fuss (c) Gegenbaur (d) Lamarck
 2. Which of the following has only one host _____
 (a) E. Coli (b) T. gambiense (c) T. Solium (d) P. vivax
 3. Malaria is transmitted _____
 (a) Female culex mosquito
 (b) Female Anopheles mosquito
 (c) Male culex mosquito
 (d) Male Anopheles mosquito
 4. Trypanosoma finally invades _____
 (a) Cerebrospinal fluid (b) Brain (c) Liver (d) Blood
 5. Trichomonas vaginalis _____ Transmitted disease
 (a) Sexually (b) water (c) Air (d) None

6. The Best treatment for Coccidiosis _____
 (a) Antiviral drug (b) Antibiotics (c) Sulpha drug (d) Antipyretic
7. Giardia was described by _____ in 1859.
 (a) Ronald Ross (b) Aristotle (c) Lambl (d) None
8. Trypanosome requires _____ host for its cycle
 (a) One (b) Two (c) Three (d) Four
9. In sexual cycle of emesis involving _____.
 (a) Gametogony (b) Sporogamy (c) both a & b (d) None of these
10. Scientific name of Tsetse fly _____
 (a) Aedes Egyptii (b) Glossins Palpalis (c) Culexanopheles (d) None

OR

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SUBJECT CODE NO:- L-2020
FACULTY OF SCIENCE
B.Sc. T.Y. (Sem-V) Examination Oct/Nov 2018
Elective Paper Zoology Paper-XVI
(E) Computer Application & Lab Technology-I

[Time: 1:30 Hours]

[Max.Marks:50]

Please check whether you have got the right question paper.

N.B

- i) Attempt all questions
- ii) Illustrate your answer with suitable diagram.

Q.1 What are storage devices? Explain with reference to input devices. 20

OR

Explain the history of computer and Write any two application to Biology. 20

Q.2 What is an operating system? Discuss windows XP in detail. 20

OR

Write short note on any four of the following. 20

- a) Printer
- b) Keyboard
- c) C constants
- d) MS-Word
- e) ROM
- f) Unix

Q.3 Select and write correct answer from the given alternative in each sub-questions. 10

1. Which of the following storage device can store maximum amount at data
 - a) Optical disk
 - b) Hard disk
 - c) Floppy disk
 - d) Compact disk
2. Operating System is a _____
 - a) Application software
 - b) System software
 - c) Computer Language
 - d) Application hardware
3. Which key on keyboard can be used to cancel all.
 - a) F₁
 - b) TAB
 - c) ESC
 - d) F₂

4. When any file or folder is deleted it will parked in _____
 - a) Memory
 - b) My Computer
 - c) My Network
 - d) Recycle bin
5. Which of the following device is not an output device
 - a) Printer
 - b) Scanner
 - c) Touch Screen
 - d) Flat Screen
6. Which of the following is not an operating system.
 - a) Windows-95
 - b) Windows-96
 - c) Windows-98
 - d) Windows-2000
7. Full Form of WAN is
 - a) Word area Network
 - b) World area Network
 - c) Wide area Network
 - d) Window area Network
8. In MS-Excel, MS stand for
 - a) Master Server
 - b) Micro Server
 - c) Microsoft
 - d) Mega Series
9. To paste copied matter from one place to another in windows, we use the short –cut key as
 - a) Ctrl + S
 - b) Ctrl +V
 - c) Ctrl + P
 - d) Ctrl + X
10. Folder may contain
 - a) Folders
 - b) Files
 - c) Only file
 - d) File and folders

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SUBJECT CODE NO:- L-2020
FACULTY OF SCIENCE
B.Sc. T.Y. (Sem-V) Examination Oct/Nov 2018
Elective Paper Zoology Paper-XVI
F) Biotechnology-I

[Time: 1:30 Hours]

[Max.Marks:50]

- N.B Please check whether you have got the right question paper.
- i) Attempt all questions.
 - ii) Illustrate your answer with suitable labelled diagram.

- Q.1 Define Biotechnology? Explain scope and importance in detail 20
- OR**
- What is genomic library? Explain construction CDNA library 20
- Q.2 Define restriction enzyme? Give an account on theory of nomenclature and its type. 20
- OR**
- Write short note on any four of the following 20
- a) Micro injection
 - b) Gene cloning application
 - c) Colony blotting
 - d) Plasmid
 - e) Isolation of DNA from cell
 - f) Polymerase chain reaction
- Q.3 Select and Write correct answer from the given alternatives in each sub questions. 10
1. A term enzyme was introduced by _____.
 (a) Mendel (b) Aristotle (c) Kuhne (d) Freschney
 2. The virus mediated gene transfer using genetically modified bacterio phages is called _____.
 (a) transfection (b) transduction (c) transformation (d) Conjugation
 3. Enzymes are _____ specific
 (a) Substrate (b) Coenzyme (c) Metal (d) Ion
 4. The ability of cells to taken up DNA Fragments from surrounding is called _____.
 (a) transfection (b) transduction (c) transformation (d) conjugation
 5. RNA with enzymatic action is called _____.
 (a) Isozymes (b) metazomes (c) ribozyme (d) Catayzemes

6. Which of the following bacterium is _____ considered as natural genetic engineer
 - (a) *Agarobacterium tumefaciens*
 - (b) *Agarobacterium radiobacter*
 - (c) *Psuedomonas putida*
 - (d) *Thermus aquaticus*
7. Oxidoreductases are involved in _____ reaction.
 - (a) Isomerization
 - (b) hydrolyzation
 - (c) Formation of Covalent bond
 - (d) redox
8. The removal of tumor causing gene from T₁ plasmid is _____.
 - (a) Gene replacement
 - (b) Disarming
 - (c) Insertional activation
 - (d) Gene displacement
9. Abzymes are _____ that catalyze chemical reactions.
 - (a) Antigen
 - (b) Antibiotics
 - (c) Zumogens
 - (d) None
10. Chemicals used for gene transfer methods include _____.
 - (a) Polyethylene Glycol
 - (b) CaCl₂
 - (c) dextran
 - (d) All above

OR

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SUBJECT CODE NO:- L-2020
FACULTY OF SCIENCE
B.Sc. T.Y. (Sem-V) Examination Oct/Nov 2018
Elective Paper Zoology Paper-XVI
(G) Dairy Science - I

[Time: 1:30 Hours]**[Max.Marks:50]**

- N.B Please check whether you have got the right question paper.
- i) Attempt all Questions.
 - ii) Illustrate your answer with suitable labelled diagram.

Q.1 Write an essay on growth and Destruction of microorganisms in milk, And classify the micro-organisms of milk. 20

OR

Describe method of buying, collection, cooling and transportation of milk. 20

Q.2 Define Dahi, its composition and method of Dahi production, Add the food and nutritive value of Dahi. 20

OR

Write short note on any four of following 20

- (a) Grading of milk.
- (b) Properties of milk.
- (c) Storage of milk.
- (d) Importance of Indian Dairy
- (e) Method of Channa Production
- (f) Defect of Khoa.

Q.3 Select and write correct answer from the given alternatives in each sub questions. 10

1. _____ cause (s) off flavors in milk such as
 (a) Chemical adulterants (b) Microorganisms (c) Sediment (d) Weeds
2. Which is not a dairy product
 (a) Dahi (b) Channa (c) Khoa (d) Isenglass
3. Which of the following are lactogenic hormone.
 (a) Galactogen (b) Prolactin (c) Both a & b (d) FSH
4. Pasteurized milk is
 (a) Fresh milk (b) Packed milk (c) Skimmed milk (d) None of these
5. Cream is a fat containing fraction separated from milk by
 (a) Centrifugation (b) Pasteurization (c) Condensation (d) Rotation

6. Organism present in the curd are mainly
(a) Streptococci (b) lactobacillus casie (c) Both a & b (d) None of these
7. Khoa is used in
(a) Gulab Jamun (b) Pedha (c) Barfi (d) All of these
8. Primary protein in milk is
(a) Casein (b) Tryptophan (c) Lysine (d) Arginine
9. A dairy farmer who delivers 'Grade A' milk to the processing plant is known as the
(a) Handler (b) Producer (c) Order taker (d) Consumer
10. The Tanker of milk must be checked for which of the following before it can be unloaded at milk plant.
(a) Antibiotics (b) Lactose (c) Fat (d) BST

OR

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SUBJECT CODE NO:- L-2020
FACULTY OF SCIENCE
B.Sc. T.Y. (Sem-V) Examination Oct/Nov 2018
Elective Paper Zoology Paper-XVI
(H) Poultry Science-I

[Time: 1:30 Hours]

[Max.Marks:50]

- N.B Please check whether you have got the right question paper.
- i) Attempt all questions.
 - ii) Illustrate your answer with suitable labelled diagram.

Q.1 Give a detailed account of classification of English and American poultry breeds. 20

OR

Describe digestive system of poultry breeds. 20

Q.2 Give an account of management of Incubators 20

OR

Write short notes on any four of the following 20

- (a) Nutritive value of egg
- (b) Method of selection
- (c) Humidity
- (d) Fertility
- (e) Mating
- (f) Control.

Q.3 Select and write correct answer from the given alternatives in each sub questions. 10

1. American class of birds _____.
 (a) Rhode Island Red (b) Plymouth Rock (c) Vividot (d) All of these
2. The hens undergo moulting from _____.
 (a) October to January (b) July to August (c) February to May (d) None
3. Fowl cholera is caused by _____.
 (a) Filaria (b) Virus (c) bacteria (d) Fungus
4. The domestic fowl is _____.
 (a) Gallus domesticus (b) Wite Plymouth rock
 (c) Rhode Island Reds (d) New Hampshire
5. The testes of poultry are located _____.
 (a) Below kidneys (b) Above kidneys (c) Scrotum (d) None
6. Liquid whole egg of poultry contains _____ albumen
 (a) 62-70% (b) 90-94% (c) 61-64% (d) 72-80%

7. Average carbohydrate in poultry egg is _____.
(a) 0.45-0.47% (b) 0.50-0.55% (c) 0.35-0.45% (d) 0.65-0.67%
8. A poultry meat is a good source of _____ Vitamins.
(a) Vit C,K & E,B (b) Riboflavin, nicotinic acid, Vit A & Vit D (c) A&B (d) C&D
9. Dressing is the process of _____.
(a) Cleaning poultry meat (b) Preparing fowls
(c) Cutting poultry for meat for competition (d) All above
10. Calcium contents in poultry egg is _____.
(a) 20 (b) 30 (c) 40 (d) 50

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SUBJECT CODE NO:- L-2035
FACULTY OF SCIENCE AND TECHNOLOGY
B.Sc. F.Y. (Sem-I) Examination Oct/Nov 2018
Zoology Paper-I
Protozoa to Annelida

[Time: 1:30 Hours]

[Max.Marks:50]

Please check whether you have got the right question paper.

N.B

1. Attempt all questions.
2. Illustrate your answer with suitable labeled diagram.

- Q.1 Describe in detail life cycle of Entamoeba histolytic. 20
OR
 Explain in detail structure of Taenia solium. 20
- Q.2 Describe in detail different types of canal system in Sponges. 20
OR
 Write short notes on (any four) 20
- a) Metazoan
 - b) Nephredia
 - c) Anterior sucker of leech
 - d) General characteristics of Annelida
 - e) Erythrocytic schizogony.
 - f) Binary fission of Euglena
- Q.3 Select and write correct answer from the given alternatives in each sub questions 10
- 1) Entamoeba histolytica is a _____
 a) Polygenetic parasite b) digenetic parasite c) monogenetic d) none of these
 - 2) Sporogamy of malarial parasite occurs in:
 a) Stomach of mosquito b) Liver of man c) RBC of man d) none of these
 - 3) Flagellated cells in sponges are called:
 a) Pinacocytes b) Choanocytes c) Porocytes d) Thesocytes
 - 4) The number of tentacles of obelia medusa is:
 a) 8 b) 16 c) 32 d) 64
 - 5) Miracidium is one of the stage in the development of:
 a) Ascaris b) Taenia solium c) Fasciola hepatica d) Planaria

- 6) Bladder Worms is found in
a) Human muscles b) Muscles of cow or pig c) Human faces d) Soil
- 7) Contractive vacuole in protozoans is chiefly concerned with the process of
a) Digestion b) excretion c) osmoregulation d) assimilation
- 8) How many chambers are found in the crop of leech:
a) Six b) eight c) nine d) ten
- 9) In Hirudinaria there is no special organ for:
a) Digestion b) excretion c) respiration d) reproduction
- 10) Organelle of defence in Paramecium are:
a) Nematocyst b) Oocyst c) Sporocyst d) Trichocyst.

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SUBJECT CODE NO:- L-2038
FACULTY OF SCIENCE AND TECHNOLOGY
B.Sc. S.Y. (Sem-III) Examination Oct/Nov 2018
Zoology Paper-VII
Vertebrate Zoology

[Time: 1:30 Hours]

[Max.Marks:50]

N.B Please check whether you have got the right question paper.

1. Attempt all questions.
2. Illustrate your answer with suitable labeled diagram.

- Q.1 Write an account on parental care in amphibia. 20
 Describe Digestive system of scoliodon. 20
- OR**
- Q.2 Give an account on migration in birds 20
 Write short note on (any four) 20
- a) Cleavage of chick
 - b) General characteristics of mammals.
 - c) Gastrulation in chick
 - d) External character of ratus satus.
 - e) Poisonous and non-poisonous snake
 - f) Structure of mammalian heart.
- Q.3 Multiple choice questions. 10
1. The body of all vertebrate is
 - a) Radially symmetrical
 - b) Asymmetrical
 - b) Bilaterally symmetrical
 - d) Biradially symmetrical
 2. In fishes the cranial nerves are
 - a) 10 pairs
 - b) 8 pairs
 - c) 6 pairs
 - d) 12 pairs
 3. Bidder's canal in frog is found in
 - a) Liver
 - b) Kidney
 - c) testis
 - d) ovary
 4. The poison gland of a poisonous snake are modified
 - a) Salivary glands
 - b) buccal glands
 - c) palatine glands
 - d) lacrimal glands
 5. In birds the bones are characterized by
 - a) Having air cavities
 - b) being light in weight
 - c) spongy nature but strong
 - d) all of these

6. Which of following group of mammals, the placenta is absent.
 a) Prothesia b) Metathesia c) Euthesia d) theria
7. Jaws are absent in
 a) Mammals b) cyclostomata c) fishes d) Sciliodon
8. Thermo receptors of sciliodon are
 a) Stato-acoustic organs b) Neuromast organs c) Air-bladder
 d) Ampullae of lorenzini
9. The egg of frog is
 a) Isolecithal b) Telolecithal c) Centrolecithal d) Alecithal
10. Mammals are
 a) Eurythesmal b) Homeiothermal c) Poikilothermal d) Stenothermal

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SUBJECT CODE NO:- L-2039
FACULTY OF SCIENCE AND TECHNOLOGY
B.Sc. S.Y. (Sem-III) Examination Oct/Nov 2018
Zoology Paper-VIII
Genetics- II

[Time: 1:30 Hours]

[Max.Marks:50]

Please check whether you have got the right question paper.

- N.B
1. Attempt all questions.
 2. Illustrate your answer with suitable labeled diagram.
- Q.1 Write in detail the process of translation of gene. 20
OR
 Explain sex linked inheritance in man with suitable example. 20
- Q.2 Define microbial genetics. Write an account on transformation mechanism. 20
OR
 Write short notes on any four of the following 20
- a) Dizygotic twins.
 - b) Cosmid vector.
 - c) Turner's syndrome.
 - d) Gene therapy
 - e) PKU
 - f) Wobble hypothesis
- Q.3 Multiple choice questions. 10
- 1) The process of mRNA. Synthesis in DNA template. Is known as _____
 a) Transcription b) Translation c) Transduction d) Transformation
 - 2) Numbers of autosome in human sperm is _____
 a) 11 b) 22 c) 44 d) 45
 - 3) Combination of plasmid DNA and desired gene is called _____
 a) r DNA b) C-DNA c) RNA d) T-DNA
 - 4) Genes for color blindness in man are located on _____
 a) Y chromosome only b) X chromosome only
 c) Either X or Y chromosome d) on both X and Y chromosome.

- 5) Genetic drift _____
a) Is an orderly change in gene frequencies?
b) Produces greatest fluctuations in large population.
c) Is the random change in gene frequency?
d) Has nothing in common with in breeding.
- 6) The codon is found in _____
a) DNA b) rRNA c) tRNA d) mRNA
- 7) The first licensed drug produced through genetic engineering is _____
a) Interferon b) Insulin c) Penicillin d) somatotrophin.
- 8) Electrophoresis is a technique used in DNA fingerprinting helps to separate _____
a) DNA segment b) cells from DNA c) Tissues d) RNA from DNA
- 9) Red blindness is called _____
a) Night blindness b) Protonopia c) Deuteranopia d) Albinism
- 10) Genes are _____
a) Lipoproteins b) Polynucleotides c) glycoproteins d) Histones

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SUBJECT CODE NO:- L-2155
FACULTY OF SCIENCE AND TECHNOLOGY
B.Sc. T.Y. (Sem-VI) Examination Oct/Nov 2018
Zoology Paper- XIX (601)
(Evolution)

[Time: 1:30 Hours]

[Max.Marks:50]

Please check whether you have got the right question paper.

N.B

- 1) Attempt all questions.
- 2) Illustrate your answer with suitable labeled diagram.

Q.1 What is organic evolution? Explain anatomical evidence of evolution. 20

OR

Write an essay on natural selection theory. 20

Q.2 What is Macro evolution? Explain its concept silent features and mechanisms with suitable example. 20

OR

Write short notes on any four of the following. 20

- a) Foot prints
- b) Petrification
- c) Parapatric speciation
- d) Isolation
- e) Genetic drift
- f) Allopatric speciation

Q.3 Select and write correct answer from the given alternatives in each sub questions. 10

- 1) Mutation may be described as -----
 - a) Continuous genetic variation
 - b) Phenotypic change
 - c) Discontinuous genetic variation
 - d) Change due to hybridisation
- 2) Evolution of a species is based upon sum total of adaptive changes preserved by -----
 - a) Natural selection
 - b) Isolation
 - c) Speciation
 - d) Human conservation
- 3) Sympatric speciation develops reproductive isolation without -----
 - a) Geographic barrier
 - b) Barrier to mating
 - c) Barrier to gene flow
 - d) Genetic change
- 4) Lamarck Theory organic evolution is usually known as -----
 - a) Natural selection
 - b) Inheritance of acquired characters
 - c) Descent with change
 - d) Continuity of germplasm

- 5) Study fossils is known as -----
 - a) Anatomy
 - b) Ornithology
 - c) Paleontology
 - d) Herpetology
- 6) Speciation is ----- process.
 - a) Reversible
 - b) Irreversible
 - c) Divergent
 - d) None
- 7) The biochemical theory of origin of life was given by -----
 - a) Darwin
 - b) Malthus
 - c) AI oparin
 - d) Haldane
- 8) Modern theory called synthetic theory of evolution is based on -----
 - a) Genetic and chromosomal mutations
 - b) Genetic recombination and natural selection
 - c) Reproductive isolation
 - d) All above
- 9) Vermiform appendix in man is -----
 - a) Vestigial organ
 - b) Analogous organ
 - c) Functional organ
 - d) Homologous organ
- 10) The phenomenon of non-fertilization of OVUM by sperm in any species is known as -----
 - a) Sex barrier
 - b) Morphological barrier
 - c) Physiological barrier
 - d) None of above

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SUBJECT CODE NO:- L-2156
FACULTY OF SCIENCE AND TECHNOLOGY
B.Sc. T.Y. (Sem-VI) Examination Oct/Nov 2018
Zoology Paper-XX (602)
(A) Fishery Science- II

[Time: 1:30 Hours]**[Max.Marks:50]**

N.B Please check whether you have got the right question paper.

- 1) Attempt all questions.
- 2) Illustrate your answer with suitable labelled diagram.

Q.1 What is sewage water? Describe in detail sewage fed fish culture. 20

OR

Describe in detail artificial breeding by Hypophysation. 20

Q.2 Explain in detail fish processing methods and add a note on value added products. 20

OR

Write short notes on any four of the following: 20

- i) Cast net
- ii) Gill net
- iii) Catamaran
- iv) HACCP
- v) Fish pickle, curry, meal kit
- vi) Boat

Q.3 Select and write correct answer from the given alternatives in each sub questions. 10

- 1) Rearing ponds are used for culturing----- of carps.
 a) Fingerlings b) Fry c) seeds d) Hatchlings
- 2) One of the following is viral disease-----
 a) Dropsy b) Saprologniasis c) IPN d) All the above
- 3) Dugout canoes are used for fishing in -----.
 a) Estuaries, backwaters and rivers b) Marine waters & fresh waters
 c) Brackish water & Marine waters d) All the above
- 4) Pituitary doses are injected -----
 a) Intraperitoneally b) Intramuscularly
 c) Both a & b d) None of these
- 5) The bacterial disease 'dropsy' affecting farmed fish could be effectively treated using
 a) Asta Xanthin in feed b) Terramycin in feed
 c) Benzene in feed d) Estradiol in feed

- 6) In fish spoilage the term 'Rank' is synonymous with -----
- a) Place in sequence
 - b) Hierarchical order
 - c) Rancidity
 - d) Autolysis
- 7) Which type of fish is best suited for smoking
- a) Lean and small fish
 - b) Fish with high fat
 - c) Fish with low fat
 - d) Fish with moderate level of fat
- 8) Which one of the following is a selective gear
- a) Trawl net
 - b) Trammel net
 - c) Shore seine
 - d) Gill net
- 9) Select an organic manure from below.
- a) Cow dung
 - b) Urea
 - c) Super phosphate
 - d) Tea seed cake
- 10) Which chemical used for preserving.
- a) Formalin
 - b) Iodine
 - c) Glycerin
 - d) Alcohol

OR

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SUBJECT CODE NO:- L-2156
FACULTY OF SCIENCE AND TECHNOLOGY
B.Sc. T.Y. (Sem-VI) Examination Oct/Nov 2018
Zoology Paper-XX (602)
(B) Animal Culture- II

[Time: 1:30 Hours]

[Max.Marks:50]

- N.B Please check whether you have got the right question paper.
- 1) Attempt all questions.
 - 2) Illustrate your answer with suitable labeled diagram.

- Q.1 Describe structure and working of silk gland. 20
OR
 Describe morphology of different stages of Bombyx mori. 20
- Q.2 Explain agro cottage industry and add a note of employment generation. 20
OR
 Write short notes on any four of the following. 20
- a) Charkha
 - b) Bacterial diseases
 - c) Feeding schedule
 - d) Moulting
 - e) Pest predators
 - f) Incubation
- Q.3 Select and write correct answer from the given alternatives in each sub questions. 10
- 1) Vijetha is -----
 a) General disinfectant b) Bed disinfectant
 c) Chemical used for the uniform hatching d) Pesticide
 - 2) The head office of central silk Board is located in -----
 a) Channai b) Banglore c) Kolkota d) Delhi
 - 3) Silk protein fibroin contain 50% of -----.
 a) Serine b) Alanine c) Proline d) Glycine
 - 4) Root nodule is formed by -----
 a) Rhizobium b) Nematode c) Virus d) Mealy bug
 - 5) Diploid number of chromosomes in somatic cells of Bombyx mori are -----
 a) 28 b) 56 c) 84 d) 112

- OR**

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SUBJECT CODE NO:- L-2156
FACULTY OF SCIENCE AND TECHNOLOGY
B.Sc. T.Y. (Sem-VI) Examination Oct/Nov 2018
Zoology Paper-XX (602)
(C) Entomology - II

[Time: 1:30 Hours]

[Max.Marks:50]

- N.B Please check whether you have got the right question paper.
- 1) Attempt all questions.
- 2) Illustrate your answer with suitable labelled diagram.
- Q.1 Explain in detail classification and general characters of Red cotton bug and sugarcane stem borer. 20
- OR**
- What is stored grain pest? Describe in detail life-cycle of Rice Weevil. 20
- Q.2 What is pest control methods? Describe in detail integrated pest management method of pest control. 20
- OR**
- Write short notes on any four of the followings: 20
- Hand Rotary Duster
 - Contact Poison
 - Knapsac Sprayer
 - Insecticides
 - Migration of Insects
 - Pulse beetle
- Q.3 Select and write correct answer from the given alternatives in each sub questions. 10
- Horse Fly is the ----- pest.
 - Agricultural
 - Veterinary
 - medical
 - poultry
 - Scientific name of Red Cotton Bug -----
 - Chilozonelus
 - Sitophilus oryzae
 - Desdurcus singulactus
 - Periplanata Americana
 - White grub sucks the juice of -----
 - Fruit of pomegranate
 - Flower of cotton
 - Pod of groundnut
 - Stem of sugarcane
 - Sitophilus Oryzae is commonly called as -----
 - Pulse beetle
 - Rice Weevil
 - Grain moth
 - Butterfly

- 5) Endosulphon is the ----- type of poison.
 - a) Contact
 - b) Fumigant
 - c) Systemic
 - d) all the above
- 6) Hand operating system is found in -----
 - a) Hand rotary duster
 - b) Foot pump
 - c) Cyanogas pump
 - d) All the above
- 7) Parasite and predator terms is related to -----
 - a) Biological control
 - b) IPM
 - c) Chemical control
 - d) Fumigation
- 8) Light trapper is used in -----
 - a) Biological control
 - b) IPM
 - c) Ploughing
 - d) Cultural control
- 9) Insects are transfer from one place to another place for reproduction is called as -----
 - a) Migration
 - b) Adaptation
 - c) Transformation
 - d) habitat
- 10) Jowar stem borer affects the ----- part of crop.
 - a) Root
 - b) Stem
 - c) Stalk
 - d) all the above

OR

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SUBJECT CODE NO:- L-2156
FACULTY OF SCIENCE AND TECHNOLOGY
B.Sc. T.Y. (Sem-VI) Examination Oct/Nov 2018
Zoology Paper-XX (602)
(D) Parastics Protozoa and Helminthes-II

[Time: 1:30 Hours]**[Max.Marks:50]**

N.B Please check whether you have got the right question paper.

- 1) Attempt all questions.
- 2) Illustrate your answer with suitable labelled diagram.

Q.1 Give an account on classification of helminthes with suitable examples. 20

OR

Describe lifecycle, pathogenicity & control measure of *W.bancraftii*. 20

Q.2 Write an essay on male and female reproductive system of nematode. 20

OR

Write a short notes on any four of the following. 20

- a) Hookworm
- b) Cysticercosis
- c) Hydatid cyst
- d) Trematode body wall
- e) Morphology of adult *T.Spiralis*
- f) Pathogenecity of *E.Vermicularis*

Q.3 Select and write correct answer from the given alternatives in each sub questions. 10

- 1) The common name for worms included in class trematoda is -----
 a) tapeworms b) Amoeba c) Flukes d) none of above
- 2) In cestode which layer contain thread like spine -----
 a) Inner layer b) outer layer c) comidial layer d) cortex layer
- 3) Tapeworm is -----
 a) Anxybiotic b) oxybiotic c) arobic d) none
- 4) The body is nematode is elongated and -----
 a) Oval b) cylindrical c) strobila d) both a & b
- 5) Helminths are multicellular bilaterally symmetrical-----
 a) Metazoa b) protozoa c) Nematoda d) submetazoa
- 6) Treatment of *D. Medinesis* is -----
 a) Paracetamol b) Aspergin c) Aciloc d) metronidazole

- OR**

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SUBJECT CODE NO:- L-2156
FACULTY OF SCIENCE AND TECHNOLOGY
B.Sc T.Y (Sem-VI) Examination Oct/Nov 2018
Zoology Paper-XX (602)
(E) Computer Applications & Medical Lab Technology -II

[Time: 1:30 Hours]**[Max.Marks:50]**

- N.B Please check whether you have got the right question paper.
- 1) Attempt all questions.
 - 2) Illustrate your answer with suitable labelled diagram.

- Q.1 Describe in detail the Laboratory management system. 20
- OR**
- Explain the working & principles of colorimeter. 20
- Q.2 What is the composition of blood? Explain its clinical significance. 20
- OR**
- Write a short note on any four of the following:- 20
- a) RBC's
 - b) Centrifuge
 - c) Molar solutions
 - d) Parasitic infection
 - e) Auto clave
 - f) Bile pigments
- Q.3 Multiple Choice Questions. 10
- 1) Milky white colour at urine indicates
 - a) Parasitic infection
 - b) Liver infection
 - c) fungal infection
 - d) a and b
 - 2) Normal blood clotting time is -----
 - a) 20 minutes
 - b) 5-8 minutes
 - c) 3-5 minutes
 - d) 18-19 minutes
 - 3) Formation at plasma protein occurs in -----
 - a) Spleen
 - b) tissues
 - c) Liver
 - d) Kidney
 - 4) Normal Volume semen is
 - a) 2-6 ml
 - b) 15 ml
 - c) 7-10 ml
 - d) 8-12 ml
 - 5) Disease caused by Salmonella is
 - a) Ulcer
 - b) Typhoid
 - c) Dengue
 - d) AIDS
 - 6) H₁N₁ is a causative agent at
 - a) AIDS
 - b) Swine Flu
 - c) Cancer
 - d) Bird Flu

- 7) Black and brown colour at urine indicates
a) Nephritis b) Liver infection c) poisoning d) Ulcer
- 8) In polyuria volume at urine is
a) Decrease b) Increase c) Moderate d) a and b
- 9) Erythrocytes are commonly known as -----
a) WBC b) Serum c) RBC d) Thrombocytes
- 10) Renal disorder are related to
a) Liver b) Kidney c) Lungs d) Spleen

OR

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SUBJECT CODE NO:- L-2156
FACULTY OF SCIENCE AND TECHNOLOGY
B.Sc. T.Y. (Sem-VI) Examination Oct/Nov 2018
Zoology Paper-XX (602)
(F) Biotechnology - II

[Time: 1:30 Hours]

[Max.Marks:50]

- N.B Please check whether you have got the right question paper.
 1) Attempt all questions.
 2) Draw neat labelled diagram wherever necessary.
- Q.1 Briefly describe the steps in in-vitro fertilization and Embryo transfer. 20
OR
 What are Transgenic animals? Describe Microinjection with example. 20
- Q.2 Define gene therapy? Briefly describe bone marrow transplantation. 20
OR
 Short notes any four. 20
 1. Bacterial Contamination
 2. Commercial production of enzymes
 3. Retroviral method
 4. Antigene therapy
 5. Immunological assays
 6. Disease detection
- Q.3 Choose the correct answer. 10
 1) The most effective method of sterilization is
 a) Gram rays b) boiling c) Autoclaving d) Incineration
 2) The first vaccine developed from animal cell culture was
 a) Hepatitis B Vaccine b) Influenza Vaccine
 c) Small pox Vaccine d) Polio Vaccine
 3) Dolly the sheep was cloned from
 a) An embryonic cell b) Fetal cell
 c) A memory gland cell d) Artificial cell
 4) The technique of obtaining identical copies of the desired gene is called as
 a) Gene therapy b) rDNA technology
 c) Gene cloning d) Genetic fingerprinting

- 5) The hybridomas are made by
 - a) Fusing T cells with myeloma cells
 - b) Fusing B cells with myeloma cells
 - c) Fusing T helper cells with myeloma cells.
 - d) Fusing B memory cells with myeloma cells.
- 6) Somatic cell therapy include
 - a) Ex-vivo therapy
 - b) In-vivo therapy
 - c) Antisense therapy
 - d) All of these
- 7) DNA fingerprinting is used for
 - a) In forensic studies
 - b) In pedigree analysis
 - c) To confirm cell line identity
 - d) All of the above
- 8) Monoclonal antibodies are not used in
 - a) Pregnancy test
 - b) Diagnosis of cancer
 - c) ELISA
 - d) Diagnosis of diabetes
- 9) PCR is used in
 - a) Site specific recombination
 - b) Site-directed mutagenesis
 - c) Both a & b
 - d) Site specific translocations
- 10) Mabs are used in
 - a) The screening of recombinants
 - b) Diagnostic kits
 - c) The treatment of many cancers
 - d) All of these

OR

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SUBJECT CODE NO:- L-2156
FACULTY OF SCIENCE AND TECHNOLOGY
B.Sc. T.Y. (Sem-VI) Examination Oct/Nov 2018
Zoology Paper-XX (602)
(G) Dairy Technology- II

[Time: 1:30 Hours]**[Max.Marks:50]**

N.B

Please check whether you have got the right question paper.

- 1) Attempt all questions.
- 2) Illustrate your answer with suitable labelled diagram.

- Q.1 Define Basundi. Give its chemical composition and explain method of production. 20
- OR**
- What is chakka and shrikhand? Explain composition and method of preparation. 20
- Q.2 What is Butter and explain method of manufacturing of Butter. 20
- OR**
- Write short notes on any four of the following:- 20
- a) Recombined milk
 - b) Fortified milk
 - c) Defects in Ghee
 - d) Peda
 - e) Malai ka Barfi
 - f) Microbial toxins
- Q.3 Select and write correct answer from the given alternatives in each sub question. 10
- 1) Which milk protein is most sensitive to acid -----.
 - a) Casein b) Lactoglobulin c) Lactoalbumin d) Glutein
 - 2) The minimum amount of fat in ghee is -----
 - a) 99.8% b) 99% c) 97% d) 80%
 - 3) Butter oil is high in fat soluble vitamins -----
 - a) A and C b) A and D c) K and E d) K and C
 - 4) Which culture is used in making curd -----
 - a) Bacterial Culture b) Yeast Culture
 - c) Mold Culture d) Yeast and mold Culture
 - 5) Which of the following is called the balance wheel of dairy industry-----
 - a) Flavored milk b) Buffalo milk
 - c) Cow milk d) Dry milk

- OR**

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SUBJECT CODE NO:- L-2156
FACULTY OF SCIENCE AND TECHNOLOGY
B.Sc. T.Y. (Sem-VI) Examination Oct/Nov 2018
Zoology Paper-XX (602)
(H) Poultry Science - II

[Time: 1:30 Hours]**[Max.Marks:50]**

N.B Please check whether you have got the right question paper.

- 1) Attempt all questions.
- 2) Illustrate your answer with suitable labelled diagram.

Q.1 Write in detail about Housing, sanitation and hygiene maintenance during Brooder management. 20

OR

Describe in detail folding and intensive system. 20

Q.2 Explain in detail poultry diseases. 20

OR

Write short notes on any four of the following. 20

- a) Poultry products
- b) Requirement of poultry feed
- c) Ingredient feed
- d) Preservation of poultry products.
- e) Non-conventional poultry feed
- f) Conventional poultry feed

Q.3 Select and write correct answer from the given alternatives in each sub question. 10

- 1) Some chickens are grown for -----.
 a) Meat b) chicken c) poultry d) None of the above
- 2) A -----can be as long as a football field.
 a) water b) broiler house c) poultry farm d) none of the above
- 3) The floor is covered with -----.
 a) Litter b) leaves c) ladders d) none of the above
- 4) ----- keep the chicks warm.
 a) Water b) Brooder's c) aligators d) None of the above
- 5) Waterers are kept full of -----
 a) Wait b) water c) wonder d) None of the above
- 6) Which of the following bacteria does typically induce liver granulomas in turkeys-----
 a) Clostridium septicum b) Eubacterium tortoosum
 c) Streptubacillus moniliformis d) Staphylococcus aureus

- 7) In poultry coccidiosis is caused by -----
a) Virus
b) Helminth parasite
c) Protozoan
d) Fungus
- 8) Which of the following mycoplasmas has tropism for the gastrointestinal tract-----
a) M. Ojowae
b) M. Synoviae
c) M. Gallisepticum
d) None of the above
- 9) Chicken is also called -----
a) Meat
b) poles
c) broiler houses
d) poultry
- 10) How many weeks does it take for a meat type chicken to reach a weight of 4 pounds

a) 10 days
b) 6 months
c) 6 to 8 weeks
d) 32 weeks

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SUBJECT CODE NO:- L-2036
FACULTY OF SCIENCE AND TECHNOLOGY
B.Sc. F.Y. (Sem-I) Examination Oct/Nov 2018
Zoology Paper-II
Cell Biology

[Time: 1:30 Hours]**[Max.Marks:50]**

Please check whether you have got the right question paper.

N.B

1. Attempt all questions.
2. Illustrate your answer with suitable labeled diagram

- Q.1 Describe in details structure of prokaryotic cell. 20
OR
 Give an account on ultrastructure and functions of mitochondria. 20
- Q.2 Give in detail account on types of RNA. 20
OR
 Write short notes on (any four) 20
 a) Functions of plasma membrane
 b) Light microscope
 c) Ribosomes
 d) Metaphase
 e) Types of cancer
 f) Staining
- Q.3 Select and write correct answer from the given alternatives in each sub questions. 10
- 1) The site of respiration within the cell is :
 a) Mitochondria b) Nucleoli c) Ribosomes d) Lysosomes
 - 2) Ribosomes plays an important role in :
 a) Cellular digestion b) Lipogenesis c) Protein synthesis d) Photosynthesis
 - 3) During cell division nuclear membrane reappears in:
 a) S-phase b) Telophase c) Anaphase d) Metaphase
 - 4) DNA is a polymer of :
 a) Nucleotides b) Amino acids c) Pentose sugar d) Phosphoric acid
 - 5) The nuclear membrane completely disintegrated in _____ phase.
 a) Anaphase b) Prometaphase c) Metaphase d) Telophase
 - 6) The inner lining of mitochondria is thrown into finger like projection is:
 a) Matrix b) Cristae c) Lamellae d) Grana

- 7) Ribosomes are present everywhere except:
a) Mitochondria b) Chloroplast c) Nucleus d) Cytoplasm
- 8) Which of the following has a continuous connection with the nuclear membrane :
a) Golgi bodies b) Lysosomes
c) Plasma membrane d) Endoplasmic reticulum
- 9) Golgi body is concern with the formation of :
a) Nucleus b) Lysosomes c) Ribosomes d) Endoplasmic reticulum
- 10) Phagocytized food is digested in:
a) Ribosomes b) Endoplasmic reticulum c) Golgi bodies d) Lysosomes