



ZOOLOGY PG CET MATERIAL

G.L.N.PRASAD

COACHING

The questions discussed in this document are useful for PG CET preparation

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Branches of Zoology

Branch	Area of Study
Zoology	Science of animals
Biology	Science of life
Protozoology	Science of protozoans
Para zoology	Science of sponges
Cnidology	Science of coelenterates
Helminthology	Science of helminthes
Entomology	Science of insects
Malacology	Science of molluscs
Conchology	Science of molluscan shells
Myrmecology	Science of ants
Apiculture	Rearing of honey bees
Sericulture	Rearing of silk worms
piggery	Rearing of pigs
Dairy	Rearing of cattle
Aquaculture	Rearing of aquatic organisms
Ichthyology	Science of fishes
Batracology	Science of frogs and toads
Herpetology	Science of reptiles
Ophily/ Serpentology	Science of serpents
Saurology	Science of lizards
Ornithology	Science of birds
Pterology	Science of feathers
Nidology	Science of birds' nests
Oology	Science of birds' eggs
Mammalogy	Science of mammals
Ethnology	Science of birds' migration
Tricology	Science of hair
Otology	Science of ear
Ophthalmology	Science of eyes
Rhinology	Science of nose
Odontology	Science of teeth, jaws and tongue
Tracheology	Science of trachea
Phryngology	Science of pharynx
Cardiology	Science of heart
Pleurology	Science of lungs
Dermatology	Science of skin
Hepatology	Science of liver

Myology/ Sarcology	Science of muscles
Neurology	Science of nerves or neurons
Zymology/Enzymology	Science of enzymes
Endocrinology	Science of hormones
Nephrology	Science of nephron
Andrology	Science of male reproductive system
Gynaecology	Science of female reproductive system
Osteology	Science of bones
Chondrology	Science of cartilage
Kalalogy	Science of human beauty
Pathology	Science of diseases
Therapeutics	Science of treatment
Angelology	Science of blood vessels
Oncology	Science of cancer
Biochemistry	Application of chemical principles to biological systems
Biophysics	Application of physical principles to biological systems
Biometrics	Application of mathematical principles to biological systems
Bio-informatics	Feeding of biological data into computer and retrieving the same in case of need
Bio-energetics	Science of generation and path ways of energy utilization in biological systems
Cytology	Science of cell
Zoogeography	Science of distribution of animals on earth
Palaeontology	Science of fossils
Morphology	Science of external form of an organism
Anatomy	Science of internal structure
Taxonomy	Science of classification
Embryology	Science of different stages during embryonic development
Gamellology	Science of twins
Gerontology	Science of ageing
Teratology	Science of abnormalities of embryos
Genetics	Science of hereditary and inheritance
Evolution	Science of descent of life from simple to complex organisms
Histology	Science of tissues
Gnotobiotics	Science of germ free life
Mastology	Science of breasts and teats
Bacteriology	Science of bacteria

Virology	Science of viruses
Ecology	Science of inter relation between organisms and environment
Exobiology	Science of life in other planets in space
Physiology	Science of functions of different organs
Eugenics	Science of application of genetics to human welfare
Euphenics	Science of improvement of phenotypes of human being after birth
Anthropology	Study of man as ape
Parasitology	Science of parasites
Biotechnology	Application of micro organisms in production of goods useful for human beings
Genetic engineering	Manipulation of genes to modify genes for human welfare
Pharmacology	Science of drugs
Poultry	Rearing of fowl
Haematology	Science of blood
Molecular biology	Study of life at molecular level
Kinestheology	Science of muscle movement
Immunology/Serology	Science of disease resistance

CURIOS

- Biggest cell : Ostrich egg
- Longest cell : Neuron
- Smallest cell : PPLO/Pleuro pneumonia Like Organisms/ Mycoplasma gallisepticum
- Biggest organ : Skin
- Smallest organ : Spleen
- Biggest gland : Liver
- Biggest endocrine gland : Thyroid gland

Smallest endocrine gland	: Pituitary gland
Mixed gland	: Pancreas
Jack of All	: Skin
Chemical factory of the body	: Liver
Longest bone	: Femur
Smallest bone	: Stapes
Biggest muscle	: Gluteus maximus
Smallest muscle	: Stapedeus
Longest muscle	: Sartorius
Calf muscle	: Gastrocnemius
The muscle that acts as a second heart	: Soleus
The organ with maximum regeneration	: Liver
The organ with minimum regeneration	: Brain
Sweet bread	: Pancreas
Graveyard of RBC	: Spleen
Biggest RBC is found in	: Amhiuma
Longest neuron is found in	: Giraffe
Longest nerve in man	: Sciatic nerve
Intake of alcohol affects cerebellum of brain	
Biggest insect	: Atticus atlas
Mixed/Heterocrine gland	: Pancreas

Smallest unit of classification : Species

Structural and functional unit of excretory system: Nephron

Structural and functional unit of nervous system: Neuron

Structural and functional unit of muscle contraction: Sarco mere

The part that expands thousand fold on seeing the most beloved person is iris

Endocrine part of Pancreas : Islets of Langerhans

Feasting hormone : Insulin

Fasting hormone : Glucagon

Emergency hormone : Adrenalin/ Epinephrine

Fright/ Flight/ Fight hormone : Adrenalin/ Epinephrine

Biggest phagocytes : Kuffer cells of liver

Adam's apple : Thyroid gland

Element required for the synthesis of thyroxin: Iodine

Metal present in haemoglobin: Iron

Heart transplantation for the first time was done by Christian Bernard

Knee bone : Patella

Collar bone : Clavicle

Fluid present in joints : Synovial fluid

Acrosome of sperm is secreted by Golgi complex

The skeletal muscle with out bone is called intrinsic muscle. Tongue is an intrinsic muscle.

Power house of cell : Mitochondria

Cellular currency : ATP

Work benches of protein synthesis: Ribosomes

Carriers of inheritance : Chromosomes

Number of chromosomes present in man is one

Circular DNA of bacteria is called plasmid or nucleoid.

Acid that causes muscle fatigue is lactic acid

Acid present in red ants is formic acid

Vitamin C is chemically called Ascorbic acid.

Cheapest vitamin is Vitamin D

The vitamin that acts as a hormone is Vitamin D

Richest source of Vitamin C is Amla or Umblica officinalis.

Biggest Chordate : Blue whale/ *Balaenoptera musculus*

Largest fish : Whale shark/ *Rhinodon typus*

Smallest fish : *Paedocypris progenetica*

Largest living amphibian : *Andrias davidianus*/ Chinese giant salamander

Largest frog : *Rana goliath*/ *Conraua goliath*

Largest living reptile : *Crocodylus porosus* or Salt water crocodile

Smallest reptile: *Sphaerodactylus ariasae*/*Jaaragua sphaero*/dwarf gecko

Largest living bird : Ostrich/*Struthio camelus*

Smallest bird : *Mellisuga helenae*/ Bee humming bird

Largest mammal : Blue whale/ *Balaenoptera musculus*

Smallest mammal : Bumble bee bat of Thailand/*Craseonycteris Thonglongyai*

Smallest mammal by mass: Etruscan Pygmy Shrew

Biggest land mammal : *Elephus maximus*

Carnivorous mammals are absent in Australia

Australia is called “Land of Marsupials” or “Land of archaic mammals”

Biggest marsupials : *Macropus/kangaroo*

Longest gestation period is found in elephant.

Shortest gestation period is found in Opossum.

Muscle is called “Biological machine”.

Ions required for muscle contraction are calcium

Ions required for muscle relaxation are magnesium

S.No	Scientific name	Common name
1	<i>Paramecium</i>	Slipper animalcule
2	<i>Euglena</i>	Eye animalcule
3	Protozoans	Wretched animalcules
4	<i>Giardia</i>	Grand old man of intestine
5	Heliozoans	Sun animalcule
6	<i>Chalina</i>	Dead man's fingers
7	<i>Euplectella</i>	Venus flower basket
8	<i>Euspongia</i>	Bath sponge
9	<i>Hyalonema</i>	Glass rope sponge
10	<i>Aurelia</i>	Jelly fish
11	<i>Physalia</i>	Portuguese man of war
12	<i>Hydra</i>	Water polyp
13	<i>Taenia solium</i>	Pork tape worm
14	<i>Taenia saginata</i>	Beef tape worm
15	<i>Dibothriocephalus latus</i>	Fish tape worm
16	<i>Fasciola hepatica</i>	Liver fluke
17	<i>Schistosoma haematobium</i>	Blood fluke
18	<i>Ascaris lumbricoides</i>	Round worm

19	Ancylostoma duodenale	Hook worm
20	Enterobius vermicularis	Pin worm
21	Sand worm	Nereis
22	Aphrodite	Sea mouse
23	Chaetopterus	Paddle worm
24	Arenicola	Lug worm
25	Eunice	Polalo worm
26	Limulus	King crab
27	Sarcoptes	Mite
28	Balanus	Rock barnacle
29	Sacculina	Root headed barnacle
30	Daphnia	Water flea
31	Palaemon	Fresh water prawn
32	Astacus	Cray fish
33	Palamnaeus	Scorpion
34	Aranea	Spider
35	Lepisma	Book worm/ Silver fish
36	Pediculus	Head louse
37	Periplanata	Cockroach
38	Pila	Apple snail
39	Aplysia	Sea hare
40	Cypraea	Cowrie
41	Limax	Slug
42	Doris	Sea lemon
43	Helix	Land snail
44	Patella	Limpet
45	Dentalium	Elephant tusk shell
46	Unio	Fresh water mussel
47	Mytilus	Marine mussel/ Sea water mussel
48	Pinctada	Pearl oyster
49	Pecten	Scallop
50	Teredo	Ship worm
51	Octopus	Devil fish
52	Sepia	Cuttle fish
53	Architeuthis	Giant squid
54	Antedon/Neometra	Feather stars
55	Asterias	Star fish
56	Echinus	Sea urchin
57	Echinocardium	Heart urchin
58	Echinodiscus	Sand dollar
59	Clypeaster	Cake urchin/ Sea biscuit

60	Holothurians	Sea cucumbers
61	Balaenoptera musculus	Blue whale
62	Scoliodon	Indian dog fish
63	Myliobatis	Sea vampire/eagle ray
64	Trigon	Sting ray
65	Torpedo	Electric ray
66	Stegostoma	Tiger shark/zebra shark
67	Sphyrna	Hammer headed shark
68	Pristis	Saw fish
69	Chimaera	Rat fish
70	Rhinobatis	Guitar fish/banjo ray
71	Raja	Skate
72	Neoceratodus	Australian lung fish
73	Lepidosiren	South American lung fish
74	Protopterus	African lung fish
75	Dipnoi fish	Uncles of amphibia
76	Sea horse	Hippocampus
77	Echeneis	Sucker fish
78	Exocoetus	Flying fish
79	Anguilla	Eel
80	Amia	Bow fin
81	Lepisosteus	Garpike
82	Acipenser	Sturgeon
83	Testudo	Tortoise
84	Trionyx	Terrapin
83	Chelonia mydas	Green sea turtle
84	Dermochelys coriacea	Leather back turtle
85	Tuatara lizard/Hatteria	Sphenodon
86	Hemidactylus	House lizard/ wall lizard
87	Calotes	Garden lizard/ Blood sucker
88	Draco	Flying lizard
89	Phrynosoma	Horned toad
90	Heloderma	Gila monster/Mexican beaded lizard
91	Varanus monitor	Indian monitor lizard
92	Ophiosurus	Glass snake
93	Naja hanna	Ophiophagous hanna/Hamadrayad/king cobra
94	Vipera russelli	Russell's viper/Chain viper
95	Ancistrodon	Himalayan pit viper
96	Trimeresurus	Lachesis
97	Echis carinatus	Saw scaled viper

98	Bungarus caeruleus	Common krait
99	Bungarus fasciatus	Banded Krait
100	Typhlops	Blind snake
101	Ptyas	Rat snake
102	Eunectes murinus	Green Anaconda
103	Eryx johnii	Sand boa
104	Struthio camelus	Ostrich/camel bird
105	Dromaius	Emu
106	Casuaris	Cassowary
107	Tinamus rhincodon	Tinamu
108	Apteryx	Kiwi
109	Passer domesticus	Sparrow
110	Mylvus	Eagle
111	Parrot	Psittacula krameri
112	Carvus splendense	Crow
113	Eudynamus	Koel
114	Macropus	Kangaroo
115	Myrmecobius	Banded ant eater
116	Thylacinus	Tasmanian wolf
117	Perameles	Marsupial bandicoot
118	Caenolestus	Opossum rat
119	Phascolaractus	Koala bear
120	Pteropus	Flying fox

TYPES OF DRUGS

1	Antipyretics	Drugs used reduce body temperature to normal level
2	Antibiotics	Drugs used to kill other organisms like bacteria
3	Antacids	Drugs that are used to neutralise acidity
4	Anti inflammatory	Drugs used to reduce inflammation
5	Sedatives	Drugs that induce sleep
6	Tranquilisers	Drugs that regain tranquillity
7	Analgesics	Drugs used to reduce

		pain
8	Antidotes	Drugs that neutralise the effect of toxins or poisons

Barbiturates are sedatives

Diclofenac sodium is the extensively used pain killer now a days and this is reported to be carcinogenic.

Pain killers cause acidity

Milk of magnesia is used as antacid.

Larval Stages

Larval stages facilitate the dispersal of the species

The larval stages of sedentary animals like sponges are free moving and this avoids over crowding.

Larval stages of sponges are symmetrical where as adults are asymmetrical.

Larval stages of Echinoderms exhibit bilateral symmetry where as the adults exhibit pentamerous symmetry.

Glochidium larva of mollusca is a parasitic larva

S.No	Name of the Phylum	Name of the larva
1	Porifera	Amphiblastula, paranchymula, Coelogastrula
2	Coelenterata	Planula, Ephyra, Schiphystoma
3	Platyhelminthes	Hexacanth, oncosphere, cysticercus, redia, sporocyst, miracidium, cercaria, metacercaria
4	Nematyhelminthes	Rhabditiform,

		Microfilaria, Strongyliform
5	Annelida	Trochophore
6	Arthropoda	Maggot, wriggler, caterpillar, grub
7	Mollusca	Veliger, trochopore, Glochidium
8	Echinodermata	Bipinnaria, echinopleuteus, ophiopleuteus, auricularia
9	Fishes(Eel)	Elver
10	Amphibia(Frog)	Tadpole larva

Larva differs from adult physiologically and ecologically.

Nymph resembles the adults in all respects except in reproductive maturity.

Transformation of larva into adult is called metamorphosis.

Metamorphosis in amphibians is facilitated by thyroxin.

Transformation of aquatic, herbivorous, gill breathing and tail containing tadpole into amphibious, entamophagous, lung breathing and tail less adult frog is called metamorphosis.

If thyroid gland of tadpole larva is surgically removed, it fails to undergo metamorphosis. If thyroxin of humans is injected into the same, it again shows metamorphosis.

The larval stages growing in iodine deficient water shows neoteny and paedogenesis.

Extension of larval stage is called neoteny and if the larva attains reproductive maturity, it is called paedogenesis.

Neoteny is the cause and paedogenesis is the effect.

Thread found in Glochidium larva is called byssus. This is useful for attachment.

Diseases and Causative organisms

If one is not at ease, it is called disease.

Disease is a metabolic derailment.

Fever is the symptom of disease.

Fever is caused by pyrogens released by bacteria.

Pyrogens are chemicals that increase the body temperature.

Hemozoin released by Plasmodium causes malaria.

S.No	Name of the disease	Causative organism
1	Amoebiasis	Entamoeba histolytica
2	Giardiasis	Giardia
3	Malaria	Plasmodium
4	African Sleeping sickness	Trypanosoma gambiense
5	Taeniasis	Taenia solium
6	Liver rot in sheep	Fasciola hepatica
7	Ascariasis	Ascaris lumbricoides
8	Ancylostomiasis	Ancylostoma duodenale
9	Filariasis/Elephantiasis	Wuchereria bancrofti
10	Tuberculosis	Mycobacterium tuberculosis
11	Typhoid	Salmonella typhus
12	Cholera	Vibrio cholerae
13	Leprosy	Mycobacterium lepri
14	Common Cold	Rhino virus
15	AIDS	HIV virus

Cold: Common Obstructive Lung Disease

Antibiotics do not work on viruses as viruses do not have their own metabolism.

Treated cold remains a week and untreated cold remains for seven days.

Anti viral protein secreted by viral infected cell is interferon.

Medicine is curative and vaccine is preventive.

Father of immunology: Edward Jenner

Edward Jenner prepared vaccine for small pox

Louis Pasteur prepared vaccine for rabies

Wasim Siddique prepared vaccine for malaria

Hydrophobia is associated with rabies

BCG vaccine is given to prevent Tuberculosis

Widal test is performed to diagnose typhoid

Mantoux test is conducted to confirm Tuberculosis

Sputum test is conducted to diagnose Tuberculosis

Blood test is conducted to confirm malaria

Stool examination is done to confirm amoebiasis

Organ that undergoes swelling during malaria fever is spleen.

ELISA is Enzyme Linked Immuno Sorbent assay. It is used to identify AIDS.

Western Blot is used to confirm AIDS.

Zidovudine is the drug used in the treatment of AIDS. It is also called AZT.

AIDS can not be cured at present.

TYPES OF BACTERIA

Coccus	: Round bacteria
Vibrio	: Comma shaped bacteria
Spirilli	: Spiral shaped bacteria
Bacillus	: Rod shaped bacteria

Medical Instruments & Methods

Stethoscope is used to measure heart beat

Increase in rate of heart beat is called tachycardia.

Decrease in rate of heart beat is called bradycardia

Irregular heart beat is called arrhythmia.

Aspirin is used by heart patients

Aspirin is Acetyl Salicylic acid

An aspirin a day keeps the doctor away.

Sphygmomanometer is used to record blood pressure.

Highest BP is recorded in giraffe.

High BP is technically called hypertension.

ECG: Electro cardio Gram

EEG: Electro Encephalo Gram

Endoscopy is used examine the internal parts of digestive tract.

Blood pressure is required to pump the blood from heart to brain

Removal of uterus is called hysterectomy

Removal of tonsils is called tonsillectomy

Surgical removal of testis is called orchiectomy

Surgical removal of breast is called mastectomy

Surgical removal of thyroid gland is called thyroidectomy

Treatment by medicines and other chemicals- Chemotherapy

Treatment by water- Hydrotherapy

Treatment by sun rays- Heliotherapy

Treatment by radiation- Radiotherapy

Treatment by changing the behaviour- behaviour therapy

Treatment by fragrance and odours- aroma therapy

Treatment is technically called “therapy”

Facts about cancer

Most common cancers in man are oral and lung cancers

Lung cancer is caused due to cigar smoking

Oral cancers are caused due to chewing of gutka

White patches on tongue and tumours in mouth may indicate oral cancer

Most common cancers in woman are cancers of cervix and breast

Cervix is the neck of uterus

Uterus cancer is caused by papilloma virus

Pop smear test is performed to identify uterus cancer clinically

Breast cancer is identified by mammogram

BSE: Breast Self Examination is a method that should be followed by every woman to identify any lumps and abnormalities associated with breasts.

Mastectomy is performed to cure breast cancer

Breast pain that occurs during menstrual cycle is called mastalgia

Lesion in the liver in cancer patients indicate final stages

There are more than 200 different types of human cancers identified.

Benign tumour is the localised tumour where as malignant tumours spread to different parts of the body.

Cancer is defined as unregulated proliferation of cells

The new cancer cells formed from malignant tumours in different parts of the body are called neoplasms.

Benign tumours are harmless except brain tumours

Cancers are basically classified in to 4 types. They are

- Carcinoma
- Sarcoma
- Leukaemia
- Lymphoma

Carcinoma is the malignancy associated with epithelial tissue

Malignant tumours of connective tissue are called sarcoma

Abnormal increase in the count of WBC is called leukaemia

Malignancy of lymph nodes is technically referred to as lymphoma

Gene that is responsible for causing cancer is called oncogene

Oncogenes are of two types namely viral oncogenes and cellular oncogenes.

Retroviruses are the efficient carriers of oncogenes.

Cancer of Kaposi's is associated with AIDS

Cancer cells do not exhibit contact inhibition and hence they form multiple layers.

Normal cells exhibit contact inhibition and they form single layer during division.

Obesity may be caused due to excessive intake of food and heredity.

The gene that causes obesity is called obesity gene

Surgical removal of excess fat from the body is called liposuction.

Fat acts as an energy depot.

BAT stands for Brown Adipose Tissue where as WAT stands for White Adipose Tissue.

Brown Adipose Tissue is present in infants hence they do not shiver.

Generation of heat during shivering is called shivering thermo genesis.

Hypothalamus acts as thermoregulatory centre

Temperature of Sun is measured by pyrometer

Body temperature is measured by thermometer

Sweating regulates body temperature as the sweat accumulated on the body utilizes the body temperature for getting evaporated.

Red sweat is secreted by Rhinoceros and Kangaroo.

Sweat glands are absent on lips and penis

Maximum numbers of sweat glands are present on soles, palms and axilla.

Maximum numbers of sebaceous glands are present on areola and teats or nipples. This reduces the friction during breast feeding.

Whooping cough is also known as pertussis.

The waxy coating surrounding the embryo is called vernix.

Citrulline antibody test is a specific test for rheumatoid arthritis.

The test in which the fluid in joints is drained by a sterile needle and syringe is called **arthrocentesis**.

Amniocentesis is often called sex determination test.

VITAMINS

The term vitamin was coined by Funk

Vitamins do not release any energy and they do not form any body building materials

Vitamins although do not release energy directly, they are essential for energy transfer.

They act as co-enzymes

Hopkins identified the significance of vitamins in food.

Diseases caused due to deficiency of vitamins are called deficiency disorders. They can be rectified by taking normal dose of vitamins in diet.

Vitamins are classified in to fat soluble and water soluble vitamins.

A, D, E and K are fat soluble where as B and C are water soluble

Fat soluble vitamins require bile for their absorption.

Excess vitamin intake causes hypervitaminosis. It is not reported in case of water soluble vitamins as they can be drained along with urine.

Common name of Vitamin	Chemical name of Vitamin	Deficiency disorder

Vitamin A	Retinol	Nyctalopia, Xeroprthalmia and Keratomalacia
Vitamin B ₁	Thiamine	Beri beri and Poly neuritis
Vitamin B ₂	Riboflavin	Cheilosis, glossitis and seboric dermatitis
Vitamin B ₆	Pyridoxine	Hypo chromic microcytic anaemia
Vitamin B ₁₂	Cyano cobalamine	Pernicious anaemia
Niacin	Nicotinic acid	Pellagra
Folacin	Folic acid	Macrocytic anaemia
Pantothenic acid		Premature greying of hair
Vitamin C	Ascorbic acid	Scurvy
Vitamin D	Calciferol	Rickets, osteomalacia and pigeon breast
Vitamin E	Tocopherol	Sterility in males and abortions in females, muscle cramps
Vitamin K	Naphthoquinone	Haemorrhages

Sunshine vitamin is Vitamin D

Antixerophthalmic vitamin is Vitamin A

Antirachitic vitamin is Vitamin D

Vitamin E is called anti sterility vitamin

Evion is the tablet of vitamin E

Vitamin K is called antihaemorrhagic vitamin

Precursor of vitamin A in plants is beta carotene. This is also called provitamin A

Vitamin essential for vision and healthiness of epithelial tissue is

- a. A** b. B c.C d.D

Nyctalopia is commonly called night blindness.

Vitamin A is essential for the synthesis of

- a. Visual purple b. Rhodopsin c. Calcium **d. Both a and b**

Vitamin that can be synthesized in presence of UV rays by mammals is

- a. A b. B c. C **d. D**

Mammalian skin can synthesise vitamin D

The vitamin that functions like hormone is

- a. A b. B c. C **d. D**

Vitamin essential for the synthesis of prothrombin is

- a. E **b. K** c. D. d. B₁₂

Vitamin essential for the production of antibodies is

- a. B₁ **b. B₆** c. B₁₂ d. Biotin

Biotin deficiency is found in the persons those eat raw eggs as the latter contains the protein avidin that binds to biotin.

Vitamin C is called wound healing vitamin or anti cold vitamin

Vitamin that helps to dissolve cholesterol in blood is

- a. A b. D **c. C** d. E

Vitamin required for the formation of endothelium is

- a. A b. D **c. C** d. E

Vitamin that facilitates the absorption of iron

- a. A b. D **c. C** d. E

Unusual delay in the replication of DNA is caused by the deficiency of vitamin

- a. Cyano cobalamine **b. folic acid** c. Biotin d. niacin

Vitamin responsible for the synthesis of collagen is

- a. A b. D **c. C** d. E

Collagen is a protein that binds skin to muscle. With age, its synthesis decreases. Hence wrinkles are formed due to absence of collagen in aged

The inflammation of tendons is called tendonitis. Striated muscles contract vigorously and hence they undergo fatigue.

Plasma membrane that surrounds muscle cell is called sarcolemma.

Endoplasmic reticulum of muscle is called sarcoplasmic reticulum

Sarcoplasmic reticulum is a smooth endoplasmic reticulum. It releases calcium ions required for muscle contraction.

Haemoglobin of muscle is called myoglobin

Myoglobin has more affinity for O₂ when compared to haemoglobin.

Actin and myosin are the proteins present in muscles.

Actin is lighter than myosin

Myosin contains cross bridges.

The active sites on actin filaments get exposed in presence of Ca⁺⁺

Active sites of actin filaments interact with head of myosin in presence of calcium ions to form actomyosin complex or head active complex.

Striated muscle shows light and dark bands alternatively.

Light band is called **Isotropic band** and it is denoted by I

Isotropic band contains only actin filaments

Dark band is called **anisotropic band** and it is denoted by A.

The middle of anisotropic band contains only myosin filaments where as the periphery of A band contains both actin and myosin filaments.

The middle of anisotropic band that contains only myosin filaments is called **H disc or Henson's disc**.

The sliding of myosin cross bridges on actin filaments towards H disc and vice versa is called **Ratchet mechanism** or **walk along mechanism**. Repeated contractions of striated muscle may result in fatigue.

Fatigue of muscle is due to accumulation of lactic acid formed as a result of anaerobic respiration.

Lactic acid can not be converted to pyruvic acid in the muscle as the muscle lacks **glucose-6-phosphatase**.

The shunting of lactic acid to liver for converting it to pyruvic acid is called Cori cycle.

Lactic acid is 2-Hydroxy Propanoic acid

Muscle phosphogen present in vertebrates from which ATP is rejuvenated is **Creatine Phosphate**.

Rigour mortis is the state of permanent contraction of muscles after death. It gives a clue regarding time of death in post mortem.

Stinking smell emanated from the dead body is due to release of ammonia from degraded proteins and amino acids.

Fresh urine does not smell whereas stored urine emanates stinking smell. This is due to conversion of urea into ammonia.

Smooth muscles are called visceral muscles as they are found in visceral organs. These are involuntary.

Peristalsis is a wave like contractions exhibited by oesophagus and this is involuntary.

One can swallow an apple in an inverted condition as peristalsis is not gravity dependant.

Cardiac muscles never undergo fatigue.

Cardiac muscles show intercalated discs.

Cardiac muscles resemble striated muscles in structure and smooth muscles in function.

Cardiac muscles do not show regeneration.

Skeletal muscles are regenerated from **satellite cells**

Smooth muscles are regenerated from **pericytes**.

Erector pili muscles attached to hair follicles are smooth muscles.

Muscles associated with iris and ciliary bodies of the eye are also smooth muscles.

Muscle phosphogen found in invertebrate is creatine arginase

Muscles that function antagonistic to each other are called antagonistic muscles.

General Biology for competitive examinations

1. Father of Biology is
a. **Aristotle** b. Lamarck c. Charles Darwin d. Gregor Mendel
2. The scientist who coined the term 'Biology' is
a. Aristotle b. **Lamarck** c. Charles Darwin d. Gregor Mendel
3. Father of 'genetics' is
a. Aristotle b. Lamarck c. Charles Darwin d. **Gregor Mendel**
4. Father of 'Immunology' is
a. **Edward Jenner** b. Louis Pasteur c. Huxley d. Morgan
5. Rabies vaccine was synthesised by
a. Edward Jenner b. **Louis Pasteur** c. Huxley d. Morgan
6. Plant used by Mendel for hybridization experiments is
a. Garden pea plant b. Pisum sativum c. Neem d. **Both a and b**
7. Alkaloid present in neem plant is
a. Caffeine b. reserpine c. **Nimbin** d. quinine
8. The alkaloid used for malaria is
a. Caffeine b. reserpine c. Nimbin d. **quinine**
9. The first antibiotic discovered is
a. **Penicillin** b. Streptomycin c. tetracycline d. Refampicin
10. Milk of magnesia is used as
a. **antibiotic** b. antacid c. antipyretic d. anti-inflammatory
11. Typhoid affects
a. skin b. lungs c. **intestine** d. brain
12. Leprosy is caused by
a. **Mycobacterium lepri** b. Vibrio cholerae
c. Mycobacterium tuberculosis d. Salmonella typhus
13. Cholera is caused by
a. Mycobacterium lepri b. **Vibrio cholerae**

- c. Mycobacterium tuberculosis d. Salmonella typhus
14. Tuberculosis is caused by
 a. Mycobacterium lepri b. Vibrio cholerae
 c. Mycobacterium tuberculosis d. Salmonella typhus
- 15 Identify the viral disease among the following
 Leprosy b. typhoid c. tuberculosis **d. common cold**
16. The protein secreted by the cell infected with virus is
 a. casein b. keratin **c. interferon** d. melanin
17. Milk protein is
a. casein b. keratin c. lactose d. melanin
18. Milk sugar is
 a. casein b. keratin **c. lactose** d. melanin
19. The pigment that gives black colour to skin is
a. melanin b. haemoglobin c. keratin d. chlorophyll
20. The pigment that imparts red colour to blood is
 a. melanin **b. haemoglobin** c. keratin d. chlorophyll
21. The protein present in hair is
 a. melanin b. haemoglobin **c. keratin** d. casein
22. The metal present in haemoglobin is
a. Fe b. Mg c. Mn d. Hg
23. The metal present in chlorophyll is
 a. Fe **b. Mg** c. Mn d. Hg
24. Hardest part of human body is
 a. skull b. bone **c. enamel** d. muscle
24. Longest cell in animal kingdom is
a. Neuron b. Ostrich egg c. PPLO d. Both and b
25. Biggest cell in Animal kingdom is
 a. Neuron **b. Ostrich egg** c. PPLO d. Both and b
26. Malaria day is
 a. December 1st **b. August 20th** c. June 5th d. September 5th
27. AIDS day is
a. December 1st b. August 20th c. June 5th d. September 5th
28. BCG vaccine is administered for
 a. Leprosy b. AIDS **c. tuberculosis** d. small pox
29. Oral Rehydration Solution is administered in case of
 a. Leprosy b. AIDS c. tuberculosis **d. cholera**
30. Hydrophobia is associated with
 a. Leprosy **b. rabies** c. tuberculosis d. cholera
31. Comma shaped bacterium is
a. vibrio b. coccus c. spirli d. bacillus
32. Rod shaped bacterium is
 a. vibrio b. coccus c. spirli **d. bacillus**

33. Acid present in curd is
a. Maleic acid b. citric acid **c. lactic acid** d. tartaric acid
34. Acid present in lemon is
a. Maleic acid **b. citric acid** c. lactic acid d. tartaric acid
35. Acid present in tamarind is
a. Maleic acid b. citric acid c. lactic acid **d. tartaric acid**
36. Acid present in apple is
a. Maleic acid b. citric acid c. lactic acid d. tartaric acid
37. Chemical name of vitamin C is
a. Maleic acid b. citric acid c. lactic acid **d. ascorbic acid**
38. Cheapest vitamin is
a. Vitamin A b. Vitamin B c. Vitamin C **d. Vitamin D**
38. The vitamin synthesised in the presence of UV light radiation is
a. Vitamin A b. Vitamin B c. Vitamin C **d. Vitamin D**
39. Xerophthalmia is caused due to the deficiency of
a. Vitamin A b. Vitamin B c. Vitamin C d. Vitamin D
40. Rickets is caused due to the deficiency of
a. Vitamin A b. Vitamin B c. Vitamin C **d. Vitamin D**
41. Study of cancer is
a. rhinology b. otology **c. oncology** d. cardiology
42. Study of nose is
a. rhinology b. otology c. oncology d. cardiology
43. Study of heart is
a. rhinology b. otology c. oncology **d. cardiology**
44. Study of ear is
a. rhinology **b. otology** c. oncology d. cardiology
45. Smallest bone in human body is
a. Stapes b. femur c. clavicle d. patella
46. Longest bone in human body is
a. Stapes **b. femur** c. clavicle d. patella
47. Number of bones in human being is
a. 200 b. 203 **c. 206** d. 33
48. Number of vertebrae in man is
a. 200 b. 203 c. 206 **d. 33**
49. Knee bone is
a. Stapes b. femur c. clavicle **d. patella**
50. Collar bone is called
a. Stapes b. femur **c. clavicle** d. patella
51. Number of cervical vertebrae in man is
a. 20 b. 23 **c. 07** d. 33
52. Smallest muscle in man is
a. Stapedeus b. Gluteus maximus c. Biceps d. triceps
53. Biggest muscle in man is

- a. Stapedeus **b. Gluteus maximus** c. Biceps d. triceps
54. Acid responsible for muscle fatigue is
a. Maleic acid b. citric acid **c. lactic acid** d. ascorbic acid
55. Malaria is caused by
a. Plasmodium b. Trypanosoma c. Leishmania d. Giardia
56. Rearing of honey bees is
a. sericulture b. myrmiculture **c. apiculture** d. pisciculture
57. Rearing of silk worms is
a. sericulture b. myrmiculture c. apiculture d. pisciculture
58. Rearing of fish is called
a. sericulture b. myrmiculture c. apiculture **d. pisciculture**
59. Which monument is constructed as a victory over plague?
a. Kuthub minar **b. charminar** c. Birla mandir d. janthar manthar
60. Environmental day is
a. June 5th b. June 6th c. June 7th d. July 5th
61. Which of the following chemical is known as aspirin?
a. ascorbic acid **b. acetylsalicylic acid** c. lactic acid d. formic acid.
62. Acid extracted from red ant is
a. ascorbic acid b. acetylsalicylic acid c. lactic acid **d. formic acid.**
63. The chemical used to wash the fish before cooking is
a. ascorbic acid **b. vinegar** c. lactic acid d. formic acid.
64. The chemical used to preserve dead specimen is
a. Formalin b. formic acid c. acetic acid d. acetaldehyde
65. Most abundant organic compound in the world is
a. starch **b. cellulose** c. glycogen d. glucose
66. The first organic compound synthesised in laboratory is
a. uric acid b. ammonia **c. urea** d. guanine
67. The excretory product present in white spiders is
a. uric acid b. ammonia c. urea **d. guanine**
68. Birds excrete
a. uric acid b. ammonia c. urea d. guanine
69. Biggest lizard is
a. Heloderma b. Calotes **c. Komodo dragon** d. Hemidactyls
70. Only poisonous lizard in the world is
a. Heloderma b. Calotes c. Komodo dragon d. Hemidactyls
71. Biggest chordate is
a. elephant b. whale shark **c. Blue whale** d. anaconda
72. Biggest fish is
a. elephant **b. whale shark** c. Blue whale d. anaconda
73. Which of the following is a true fish?
a. Silver fish b. star fish **c. dog fish** d. jelly fish
74. Which of the following is present in books?
a. Silver fish b. star fish c. dog fish d. jelly fish

75. Biggest phylum in Animal Kingdom is
a. Protozoa **b. Arthropoda** C. Mollusca d. Echinodermata
76. Second biggest phylum in Animal Kingdom is
a. Protozoa b. Arthropoda **C. Mollusca** d. Echinodermata
77. Biggest invertebrate is
a. Archituethis b. giant squid c. octopus **d. a and b.**
78. Which of the following sponges is given as a gift for marriages in Japan?
a. Euspongia b. Chalina **c. Euplectella** d. Phyllospongia
- 79 Which of the following sponges is known as 'bath sponge'?
a. Euspongia b. Chalina c. Euplectella d. Phyllospongia
80. Biggest organ in our body is
a. liver **b. skin** c. pituitary gland d. thyroid gland
81. Biggest gland in our body is
a. liver b. skin c. pituitary gland d. thyroid gland
82. Biggest endocrine gland in human being is
a. liver b. skin c. pituitary gland **d. thyroid gland**
83. Smallest endocrine gland in human being is
a. pituitary b. pineal c. thyroid d. thymus
84. Growth hormone is secreted by
a. pituitary b. pineal c. thyroid d. thymus
85. Which of the following is called a 'mixed gland'?
a. liver b. pituitary c. pineal **d. pancreas**
86. Which organ of the human body is called 'jack of all'?
a. liver b. pituitary **c. skin** d. pancreas
87. Wisdom teeth are
a. incisors b. canines c. premolars **d. molars**
88. The teeth that are absent in rabbit are
a. incisors **b. canines** c. premolars d. molars
89. The teeth that are not represented in milk dentition of man are
a. incisors b. canines c. premolars **d. molars**
90. Elephant tusks are modified
a. incisors b. canines c. premolars d. molars
91. The book 'Origin of Species' was written by
a. Charles Darwin b. Mendel c. Morgan d. Erasmus Darwin
92. Father of Evolution is
a. Charles Darwin b. Mendel c. Morgan d. Erasmus Darwin
93. Father of Genetics is
a. Charles Darwin **b. Mendel** c. Morgan d. Erasmus Darwin
94. Father of Modern genetics is
a. Charles Darwin b. Mendel **c. Morgan** d. Erasmus Darwin
95. The animal extensively used for experiments in genetics is

- a. Fruit fly b. Drosophila c. House fly **d. both a and b**
96. Lightning conductor was designed by
a. Thomson **b. Benjamin Franklin** c. Newton d. Bose
97. Wound healing vitamin is
a. A b. B **c. C** d. D
98. Anti cold vitamin is
a. A b. B **c. C** d. D
99. Vitamin responsible for proper functioning of lachrymal glands is
a. A b. B c. C d. D
100. Council of Scientific and Industrial Research was established by
a. Salem Ali b. J.C.Bose
c. Shantiswaroop Bhatnagar d. C.V.Raman

General Biology for competitive examinations 2

1. The oil of which bird is used for arthritis pains?
a. Emu b. sparrow c. ostrich d. humming bird
2. The bird that can fly backwards is
a. Emu b. sparrow c. ostrich **d. humming bird**
3. The element present in snake venom is
a. Bismuth b. mercury **c. arsenic** d. boron
4. The fish that constructs nest is
a. Scoliodon b. Rhynodon c. Torpedo **d. Stikil Bok**
5. Which of the following is known as 'Sea horse'?
a. Hippopotamus **b. Hippocampus** c. Scoliodon d. Rhynodon
6. Indian dog fish is
a. Hippopotamus b. Hippocampus **c. Scoliodon** d. Rhynodon
7. Shagreen that is used as abrasive is the dried skin of the fish
a. Hippopotamus b. Hippocampus **c. Scoliodon** d. Rhynodon
8. Study of fishes is called
a. ichthyology b. batracology c. herpetology d. anthropology
9. Study of frogs and toads is
a. ichthyology **b. batracology** c. herpetology d. anthropology
10. Study of human being as an ape is
a. ichthyology b. batracology c. herpetology **d. anthropology**
11. Study of ageing is
a. Gerontology b. kalalogy c. dermatology d. tribology.
12. The ageing protein is
a. keratin b. melanin **c. collagen** d. lipofuscin
13. The ageing pigment is
a. keratin b. melanin c. collagen **d. lipofuscin**
14. Protein present in hair is

- a. **keratin** b. melanin c. collagen d. lipofuscin
15. The injection used to lift the wrinkles on the skin is
a. **Botax** b. Diclofenac c. Pethedrin d. Pentathol
16. The medicine used in the treatment of amoebiasis is
a. quinine b. daraprim c. yomesan d. **metranidazole**
17. Study of human beauty is
a. Gerontology b. **kalalogy** c. dermatology d. tribology
18. Study of lubricants is
a. Gerontology b. kalalogy c. dermatology d. **tribology**
19. Study of skin is
a. Gerontology b. kalalogy c. **dermatology** d. tribology
20. The acid obtained from dried skin of fish is
a. lactic acid b. formic acid c. **acetic acid** d. tartaric acid
21. Which product of fish is used for binding books?
a. Isinglass b. **fish glue** c. shagreen d. urea
22. Which product of fish is used to improve the quality of wine?
Isinglass b. fish glue c. shagreen d. urea
23. Pigeon chest is caused due to the deficiency of the vitamin
a. A b. B c. C d. **D**
24. Which fish culture is banned in India?
a. Stone fish b. dog fish c. **cat fish** d. devil fish.
25. Which of the following is a poisonous fish?
a. **Stone fish** b. dog fish c. cat fish d. devil fish.
26. Which of the following is not a true fish?
a. Stone fish b. dog fish c. cat fish d. **devil fish.**
27. The product extracted from the airbladder of fish is
a. **Isinglass** b. fish glue c. shagreen d. urea
28. Ions required for muscle contraction are
a. Mg^{++} b. Ca^{++} c. Fe^{++} d. Cl^{-}
29. Ions required for muscle relaxation are
a. Mg^{++} b. Ca^{++} c. Fe^{++} d. Cl^{-}
30. Ions required for blood coagulation are
a. Mg^{++} b. Ca^{++} c. Fe^{++} d. Cl^{-}
31. The substance that prevents the coagulation of blood in blood vessels is
a. **heparin** b. haemolysin c. hirudin d. fibrinogen
32. The anticoagulant present in the saliva of mosquito is
a. heparin b. **haemolysin** c. hirudin d. fibrinogen
33. The anticoagulant present in the saliva of leech is
a. heparin b. haemolysin c. **hirudin** d. fibrinogen
34. The substance useful for the coagulation of blood is
a. fibrinogen b. prothrombin c. heparin d. **both a and b**

35. Which of the following terms represents blood coagulation?
a. homeostasis **b. haemostasis** c. osmosis d. hydrolysis
36. Diabetes insipidus is caused due to the deficiency of
a. insulin b. vasopressin c. ADH **d. both b and c**
37. Father of endocrinology is
a. Mendel **b. Thomas Addison** c. Bayliss d. Harvey
38. Which of the following organs of the body is called sweet bread?
a. pancreas b. liver c. kidney d. thyroid gland
39. The larva of mosquito is
a. grub **b. wriggler** c. maggot d. caterpillar
40. The larva of butter fly is
a. grub b. wriggler c. maggot **d. caterpillar**
41. The pupa of butter fly is
a. chrysalis b. caterpillar c. maggot d. grub
42. Pearls are secreted by the organisms belonging to the phylum
a. coelenterata b. porifera c. echinodermata **d. mollusca**
43. Corals are secreted by the organisms belonging to the phylum
a. coelenterata b. porifera c. echinodermata d. mollusca
44. The pupa of mosquito is
a. wriggler b. grub **c. tumbler** d. chrysalis
45. Which of the following is a regurgitated product?
a. nectar **b. honey** c. pearl d. coral
46. Hydra belongs to the phylum
a. coelenterata b. porifera c. echinodermata d. mollusca
47. The exoskeleton of insects is made up of
a. trehalose **b. chitin** c. keratin d. paraffin
48. Which of the following is known as king crab or horse shoe crab?
a. Cancer b. prawn **c. limulus** d. all
49. Uric acid is excreted by
a. birds b. reptiles c. insects **d. all**
50. Which excretory product is least soluble in water?
a. uric acid b. urea c. ammonia d. TMO
51. The gas responsible for the corrosion of Taj mahal is
a. CO₂ **b. SO₂** c. CO d. NO₂
52. Chloro fluoro carbons are used in
a. paints **b. refrigerators** c. car batteries d. leather industry
53. The acid used in car batteries is
a. HCl b. HNO₃ **c. H₂SO₄** d. HNO₂
54. The main culprits that cause ozone layer depletion are
a. Chloro fluoro carbons b. CO₂ c. CO d. Ammonia

55. Honey bees communicate through
a. enzymes b. pheromones **c. dancing** d. hormones
56. Bee language was deciphered by
a. Darwin b. Addison **c. Von Frisch** d. Alfred Nobel
57. Parthenogenesis is common among
a. earth worms **b. Honey bees** c. scorpions d. crabs
58. The cells that do not divide are
a. neurons b. muscle cells d. epidermal cells **d. both a and b**
59. The flight less bird found in India is
a. hen b. peacock c. geese **d. none**
60. Which bird is known as brood parasite?
a. crow **b. cuckoo** c. parrot d. humming bird
61. Bile is stored in
a. urinary bladder **b. gall bladder** c. spleen d. hypothalamus
62. Pancreas secretes
a. insulin b. glucagon c. growth hormone **d. both a and b**
63. Structural and functional unit of kidney is
a. nephron b. neuron c. alveoli d. sarcomere
64. Structural and functional unit of muscle contraction is
a. nephron b. neuron c. alveoli **d. sarcomere**
65. Actin and myosin are found in
a. blood b. liver **c. muscle** d. kidney
66. Which of the following is/are hereditary disease?
a. colour blindness b. haemophilia c. leprosy **d. both a and b**
67. The part of brain concerned with involuntary activities is
a. **medulla oblongata** b. cerebellum
c. cerebral hemispheres d. olfactory lobes
67. The part of brain concerned with voluntary muscle activities is
a. medulla oblongata **b. cerebellum**
c. cerebral hemispheres d. olfactory lobes
68. Which part of brain is considered as seat of intelligence?
a. medulla oblongata b. cerebellum
c. cerebral hemispheres d. olfactory lobes
69. The most common cancer among women is
a. uterus b. breast c. skin d. lung
70. The carcinogenic agent present in raw ground nuts is
a. nicotine **b. aflotoxin** c. reserpine d. coal tar
71. Father of taxonomy is
a. Darwin b. Mendel **c. Carolus Linnaeus** d. Aristotle
72. Bird with binocular vision is
a. Parrot b. crow c. humming bird **d. owl**
73. Melatonin is secreted by

- a. pituitary gland **b. pineal gland** c. thyroid gland d. adrenal gland
74. Which of the following hormones is/are known as emergency hormone?
a. epinephrine b. adrenalin c. insulin **d. both a and b**
75. The hormone that converts glucose to glycogen is
a. insulin b. glucagon c. vasopressin d. FSH
76. Acromegaly is caused due to over secretion of
a. growth hormone b. STH c. oxytosin **d. both a and b**
77. The hormone responsible for the maintenance of Basal metabolic rate is
a. insulin b. glucagon **c. thyroxin** d. melatonin
78. Study of brain is
a. craniology **b. phrenology** c. osteology d. neurology
79. Study of skull is known as
a. craniology b. phrenology c. osteology d. neurology
80. Artificial kidneys are designed by
a. Bernard b. **William jecoff** c. Patrick Manson d. Korana
81. The excretory organs in Unio are
a. nephrons b. flame cells **c. organs of Bojanus** d. skin
82. Normal blood pressure in human being is
a. 120/80 b. 80/120 c. 150/80 d. 200/120
83. The hormone that is known as “feasting hormone” is
a. glucagon **b. insulin** c. adrenalin d. epinephrine
84. The hormone that is known as “fasting hormone” is
a. glucagon b. insulin c. adrenalin d. epinephrine
85. National Institute of Virology is at
a. Kolkata b. Mumbai c. Chennai **d. Pune**
86. Central Leather Research Institute is at
a. Kolkata b. Mumbai **c. Chennai** d. Pune
87. Tirumala hills represent
a. Western Ghats b. sahyadri range **c. Eastern Ghats** d. Himalayan range
88. Examination of living tissue is
a. autopsy b. post mortem c. biopsy d. a and b
89. Catalyst used in hydrogenation of oils is
a. Pd **b. Ni** c. Zn d. Mg
90. The scientist who is called ‘wizard of wonder drug’ is
a. Swami Nathan b. Waksman c. Alexander Fleming d. Y.Subbarao
91. Central Drug research Institute is located at
a. Dehradun b. Kolkata c. Mumbai d. **Lucknow**
92. Doctor who performed heart transplantation for the first time in India

- is
- a. Bernard b. **Dr. Venugopal** c. P.K Iyyengar d. Dr.Vasanth Kumar
93. The protein associated with chromosomes is
a. Protamine b. keratin c. **histone** d. albumin
94. The vitamin that contains cobalt is
a. A b. **B₁₂** c. C d. D
95. The term vitamin was coined by
a. Funk b. Hopkins c. Korana d. Alexander Fleming
96. National Institute of Mental Health and Neuro Sciences is located at
a. Dehradun b. Kolkata c. Mumbai d. **Bangalore**
97. Neuro Linguistic Programming was designed by
a. Sigmund Freud b. Dale Carnie c. **Richard Bundler** d. Vishwamitra
98. The gas responsible for the depletion of chlorophyll in plants is
a. CO b. CO₂ c. NO d. SO₂
99. Premature aging in early age is termed as
a. progeria b. senility b. acromegaly d. cretinism
100. Identify the wingless insect among the following
a. cockroach b. mosquito c. grasshopper d. **lepisma**

AVES

1. Birds are called “glorified reptiles” by
a. Huxley b. Young c. Romer d. Aristotle
2. Birds are referred to as “masters of air” by
a. Huxley b. Young c. Romer d. Aristotle
3. Complete separation of venous and arterial blood is found in
a. Birds b. mammals c. reptiles d. both a and b
4. Flight of birds requires
a. low surface weight ratio
b. high surface weight ratio
c. equal surface weight ratio
d. none
5. Largest bird is
a. Struthio camelus
b. Ostrich
c. bee humming bird
d. both a and b

6. Smallest bird is
 - a. Struthio camelus
 - b. Ostrich
 - c. bee humming bird
 - d. both a and b

7. Smallest endotherm and homeotherm is
 - a. Struthio camelus
 - b. Mellisuga helenae
 - c. bee humming bird
 - d. both b and c

8. Only cutaneous gland present in birds is
 - a. preen gland
 - b. uropygeal gland
 - c. coccygeal gland
 - d. all the above

9. Preen gland is highly developed in
 - a. terrestrial birds
 - b. aquatic birds
 - c. flying birds
 - d. flightless birds

10. Pneumatic bones are present in
 - a. fishes
 - b. amphibian
 - c. aves
 - d. reptiles

11. Camel bird is the common name of
 - a. Struthio camelus
 - b. Ostrich
 - c. bee humming bird
 - d. both a and b

12. Author of Baya weaver is
 - a. Huxley
 - b. Young
 - c. Romer
 - d. Salim Ali

13. "Fall of a sparrow" is the autobiography of
 - a. Huxley
 - b. Young
 - c. Romer
 - d. Saleem Ali

14. Lizard bird is the common name
 - a. Archaeopteryx
 - b. Ostrich
 - c. bee humming bird
 - d. Kiwi

15. Only bird with highly developed sense of smell is
a. Archaeopteryx
b. Ostrich
c. bee humming bird
d. Kiwi
16. Fossil bird among the following is
a. Archaeopteryx
b. Ostrich
c. bee humming bird
d. Kiwi
17. Pecten is the comb like structure present in the eye of
a. mammals b. aves c. reptiles d. fishes
18. Pecten is absent in
a. ostrich b. emu c. kiwi d. crow
19. The function of pecten in birds is
a. it nourishes the retina
b. it removes metabolic wastes from vitreous humour
c. both the above
d. none of the above
20. Eggs of birds are
a. megalecithal b. telolecithal c. cleidoic d. all the above
21. Only ear ossicle present in the middle ear of birds is
a. columella auris b. malleus c. incus d. stapes
22. Double respiration is found in
a. mammals b. fishes c. birds d. reptiles

In double respiration, lungs are supplied with oxygen both during inhalation and exhalation. It is possible only in case of birds due to the presence of air sacs.

23. Number of alveoli in the lungs of birds are
a. 100 million b. 200million c. 300million d. absent
24. The flight muscle that facilitates the downward stroke of wings is
a. pectoralis major
b. supracoracoideus

c. pectoralis minor d. both b and c

25. The flight muscle that facilitates the upward stroke of wings is
 a. pectoralis major b. supracoracoideus
 c. pectoralis minor d. both b and c

Supracoracoideus is also called pectoralis minor

26. The structure present at the junction of clavicle, scapula and coracoid that acts as a pulley is

a. pectoralis major b. supracoracoideus
 c. pectoralis minor d. Foramen triosseum

27. Cervical vertebrae of birds are

a. amphicoelous b. heterocoelous c. procoelous d. amphiplatyan

28. Plough shaped bone present in birds is

a. furcula b. synsacrum c. clavicle d. pygostyle

29. The skeletal structure that supports hind limbs when the bird alights is

a. furcula b. synsacrum c. clavicle d. interclavicle

30. Tracts of feathers found on the body of birds are

a. pterylae b. apterylae c. proventriculus d. bursa fabricius

31. Featherless tracts found on the body of birds

a. pterylae b. apterylae c. proventriculus d. bursa fabricius

32. The lymphoid structure found in proctodeum of birds is

a. pterylae b. apterylae c. proventriculus d. bursa fabricius

33. The feathers that form the general covering of the body are

a. quill b. filoplumes c. down d. contour

34. The feathers that cover the interspaces on the body of birds are

a. quill b. filoplumes c. down d. contour

35. The feathers that cover the body of nestlings in birds are

a. quill b. filoplumes c. down d. contour

36. Typical feather is

a. quill b. filoplumes c. down d. contour

37. Feathers found on the tail are
a. rectrices b. remiges c. contour d. down
38. Feathers found on wings are
a. rectrices b. remiges c. contour d. down
39. Nutrients to feather are supplied through
a. superior umbilicus b. inferior umbilicus c. both d. none
40. Tuft of small and soft feathers present near superior umbilicus is
a. aftershaft b. hypo rachis c. remiges d. both a and b
41. Fossil of Archaeopteryx was discovered by
a. Huxley b. Young c. Wagner d. Saleem Ali
42. Fossil of Archaeopteryx was discovered in
a. New Zealand b. Bavaria c. Tokyo d. New Delhi
43. Bird with teeth on both jaws is
a. Archaeopteryx b. kiwi c. penguin d. peacock
44. The bird with amphicoelous vertebrae is
a. Archaeopteryx b. kiwi c. penguin d. peacock
45. The bird with teeth in jaws
a. peacock b. Hesperornis c. kiwi d. sparrow
46. Scientific name of Emperor Penguin is
a. Eudyptes pachyrhynchus
b. Spheniscus demersus
c. Aptenodytes forsteri
d. all
47. Jackass penguin is
a. Eudyptes pachyrhynchus
b. Spheniscus demersus
c. Aptenodytes forsteri
d. all
48. Rock hopper penguin is
a. Eudyptes pachyrhynchus
b. Spheniscus demersus
c. Aptenodytes forsteri
d. all

49. Bird without air sacs is
a. Pavo cristatus
b. Coraceus bengalensis
c. Penguin
d. Parrot
50. National bird of India is
a. Pavo cristatus
b. Coraceus bengalensis
c. Penguin
d. Parrot
51. State bird of Andhra Pradesh is
a. Pavo cristatus
b. Coraceus bengalensis
c. Penguin
d. Parrot
52. National bird of New Zealand is
a. Apteryx b. kiwi c. Dodo d. both a and b
53. National bird of Mauritius is
a. Apteryx b. Passenger bird c. Dodo d. both b and c
54. The bird that has become recently extinct is
a. Apteryx b. Passenger bird c. Dodo d. both b and c
55. Bird with penis or copulatory organ is
a. duck b. geese c. flightless birds d. all
56. After shaft is as long as the main shaft in
a. Emu b. Cassowary c. Dromeus d. all
57. Fastest running bird is
a. ostrich b. Rhea c. Alpine swift d. Arctic tern
58. Fastest flying bird is
a. ostrich b. Rhea c. Alpine swift d. Arctic tern
59. The bird that travels longest distance during migration is
a. ostrich b. Rhea c. Alpine swift d. Arctic tern

60. Scientific name of sparrow is
- Passer domesticus
 - Corvus splendense
 - Psittacus
 - Columba
61. Bird that can speak is
- Passer domesticus
 - Corvus splendense
 - Psittacus
 - Columba
62. Bird with beautiful plumage is
- Passer domesticus
 - Pavo cristatus
 - Psittacus
 - Columba
63. Bald headed eagle is the national bird of
- Russia
 - China
 - India
 - Mauritius
64. Bird that is regarded as a symbol of peace is
- Passer domesticus
 - Corvus splendense
 - Psittacus
 - Columba
65. Cell phone radiations are causing the extinction of
- Passer domesticus
 - Corvus splendense
 - Psittacus
 - Columba

MAMMALIA

1. Golden age of mammals is
 - a. coenozoic era b. Mesozoic era c. Jurassic period d. Triassic period
2. Mammals originated from Therapsid group of reptiles during
 - a. Devonian period b. Jurassic period c. Triassic period d. none
3. Biggest mammal is
 - a. elephant b. Blue whale c. Bumble bee bat d. Etruscan pygmy shrew
4. Biggest land mammal is
 - a. elephant b. Blue whale c. Bumble bee bat d. Etruscan pygmy shrew
5. Smallest mammal is
 - a. elephant b. Blue whale c. Bumble bee bat d. Etruscan pygmy shrew
6. Smallest mammal by mass is
 - a. elephant b. Blue whale c. Bumble bee bat d. Etruscan pygmy shrew
7. Mammals that lack hair
 - a. whale b. armadillo c. seal d. all
8. Embryonic hair found in mammals is technically called
 - a. cilia b. cirri c. lanugo d. tactile vibrissae
9. Dicondylic skull is found in
 - a. mammals b. amphibia c. aves d. both a and b
10. Characteristic number of cervical vertebrae in mammals is
 - a. 7 b. 9 c. 11 d. 33
11. Number of cervical vertebrae in giraffe is
 - a. 7 b. 9 c. 11 d. 33
12. Mammal with only six cervical vertebrae is
 - a. two toed sloth b. Manatee c. Trichechus d. all
13. Mammal with 9 cervical vertebrae is
 - a. two toed sloth b. Manatee c. Trichechus d. Three toed sloth

14. The bone found in the single half of lower jaw of mammals is
 - a. femur b. squamosal c. dentary d. palate
15. The structure that separates oral cavity from nasal cavity in mammals
 - a. femur b. squamosal c. dentary d. palate
16. The structure found in mammals facilitating to carry on chewing and respiration simultaneously is
 - a. femur b. squamosal c. dentary d. palate
17. Animal that lacks diaphragm is
 - a. Ostrich b. crocodile c. man d. whale
18. Nerve associated with diaphragm is
 - a. sciatic b. intercostals c. phrenic d. vagus
19. Muscles present in between ribs are
 - a. stapedaeus b. gluteus maximus c. intercostals d. soleus
20. Dentition in mammals is
 - a. thecodont b. heterodont c. diphyodont d. all
21. Number of salivary glands in man is
 - a. 1 pair b. 2 pairs c. 3 pairs d. 4 pairs
22. Number of salivary glands in mammals other than man is
 - a. 1 pair b. 2 pairs c. 3 pairs d. 4 pairs
23. Which of the following salivary glands are absent in man?
 - a. parotid b. infra orbitals c. sub maxillary d. sub mandibular
24. Mumps is the infection of
 - a. parotid b. infra orbitals c. sub maxillary d. sub mandibular
25. Enzyme secreted by salivary glands is
 - a. ptyalin b. salivary amylase c. protease d. both a and b
26. The structure that closes glottis during swallowing is
 - a. uvula b. palate c. epiglottis d. turbinal

27. Number of optic lobes found in mammals is
a.1 b.2 c.3 d.4
28. Corpora quadrigemina condition is found in
a. fishes b. reptiles c. mammals d. aves
29. Transverse nerve band connecting two cerebral hemispheres found in all Eutherian mammals is called
a. corpus callosum
b. corpora quadrigemina
c. copora bigemina
d. Diaphragm
30. Mammals that lack pinna are
a. Prototherians
b. metatherians
c. eutherians
d. all
31. Only oviparous mammals are
a. Prototherians
b. metatherians
c. eutherians
d. all
32. Megalecithal eggs are found in
a. reptiles b. aves c. prototherians d. all
33. Land of marsupials is
a. South America b. North America c. Australia d. Tasmania
34. Land of Archaic mammals is
a. South America b. North America c. Australia d. Tasmania
35. Carnivorous mammals are absent in
a. South America b. North America c. Australia d. Tasmania
36. Prototherian that contains erectile poisonous spine on its tarsus is
a. Zaglossus b. Tachyglossus c. male platypus d. macropus
37. Scientific name of short nosed Echidna is
a. Zaglossus b. Tachyglossus c. male platypus d. macropus

38. Scientific name of long nosed echidna is
a. Zaglossus b. Tachyglossus c. male platypus d. macropus
39. Biggest marsupial is
a. Macropus b. Opossum c. Phascolaractus d. Thylacinus
40. Scientific name of Koala bear is
a. Macropus b. Opossum c. Phascolaractus d. Thylacinus
41. Scientific name of Tasmanian wolf is
a. Macropus b. Opossum c. Phascolaractus d. Thylacinus
42. Scientific name of Opossum is
a. Macropus b. Opossum c. Phascolaractus d. Didelphis
43. Didelphic condition is found in
a. Kangaroo b. elephant c. whale d. man
44. In mammals the site of fertilization is
a. uterus b. oviduct c. fallopian tubes d. clitoris
45. Scientific name of marsupial bandicoot is
a. Perameles b. Opossum c. Phascolaractus d. Thylacinus
46. Elephant belongs to the order
a. proboscidae b. carnivora c. cetecea d. primates
47. Man, chimpanzee and gorilla belong to the order
a. proboscidae b. carnivora c. cetecea d. primates
48. Whales and dolphins belong to the order
a. proboscidae b. carnivora c. cetecea d. primates
49. Dogs, lions and tigers belong to the order
a. proboscidae b. carnivora c. cetecea d. primates
50. Sirentia includes
a. Dugong b. sea cow c. Manatee d. all

Biotechnology

1. The first product of biotechnology is
a. curd **b. alcohol** c. molasses d. antibiotic
2. Lactic acid is present in
a. curd b. alcohol c. gasohol d. antibiotic
3. Mixture of ethanol and petrol is
a. curd b. alcohol **c. gasohol** d. antibiotic
4. Gasohol was used as a fuel in
a. India b. Australia **c. Brazil** d. United States
5. By product of sugar industry is
a. glucose b. fructose **c. molasses** d. trehalose
6. Part of the brain influenced by alcohol is
a. medulla oblongata **b. cerebellum** d. cerebrum d. corpus callosum
7. Scientific name of yeast is
a. Saccharomyces cerevisiae
b. Lactobacillus bulgaricus
c. Asperigillus niger
d. Micrococcus glutamicus
8. Glutamic acid and Alpha ketoglutaric acid are synthesised from
a. Saccharomyces cerevisiae
b. Lactobacillus bulgaricus
c. Asperigillus niger
d. Micrococcus glutamicus
9. Lactic acid is produced by
a. Saccharomyces cerevisiae
b. Lactobacillus bulgaricus
c. Asperigillus niger
d. Micrococcus glutamicus

10. Citric acid is produced from
 - a. *Saccharomyces cerevisiae*
 - b. *Lactobacillus bulgaricus*
 - c. *Asperigillus niger*
 - d. *Micrococcus glutamicus*

11. Vinegar is produced by
 - a. *Acetobacter*
 - b. *Ashbya gossypi*
 - c. *Streptomyces olivaceus*
 - d. *Lactobacillus*

12. Vitamin B₂ is produced by
 - a. *Saccharomyces cerevisiae*
 - b. *Lactobacillus bulgaricus*
 - c. *Asperigillus niger*
 - d. *Ashbya gossypi*

13. Vitamin B₁₂ is produced by
 - a. *Saccharomyces cerevisiae*
 - b. *Lactobacillus bulgaricus*
 - c. *Asperigillus niger*
 - d. none

14. First antibiotic produced is
 - a. *Penicillin*
 - b. *Streptomycin*
 - c. *Rifampicin*
 - d. *Tetracycline*

15. *Penicillin* was produced by
 - a. *Alexander Fleming*
 - b. *Waksman*
 - c. *Edward Jenner*
 - d. *Louis Pasteur*

16. *Streptomycin* was discovered by
 - a. *Alexander Fleming*
 - b. *Waksman*
 - c. *Edward Jenner*
 - d. *Louis Pasteur*

17. The enzyme used to glue two fragments of DNA is
 - a. *ligase*
 - b. *polymerase*
 - c. *gyrase*
 - d. *alkaline phosphotase*

18. The enzyme used to unwind DNA is
 - a. *ligase*
 - b. *polymerase*
 - c. *gyrase*
 - d. *alkaline phosphotase*

19. The enzyme used to remove cohesive ends of DNA is
a. ligase b. polymerase c. gyrase **d. alkaline phosphatase**
20. The enzyme used to read the sequence of nucleotides is
a. ligase **b. polymerase** c. gyrase d. alkaline phosphatase
21. The enzyme DNA polymerase is produced by
a. Streptococcus pyogenes
b. Trichoderma reesi
c. Thermus aquaticus
d. Mucor pusilus
22. Rennin enzyme is synthesised from
a. Streptococcus pyogenes
b. Trichoderma reesi
c. Thermus aquaticus
d. Mucor pusilus
23. Cellulase is produced from
a. Streptococcus pyogenes
b. Trichoderma reesi
c. Thermus aquaticus
d. Mucor pusilus
24. Streptokinase is produced from
a. Streptococcus pyogenes
b. Trichoderma reesi
c. Thermus aquaticus
d. Mucor pusilus
25. Bacillus lichineformis produces the enzyme namely
a. rennin b. cellulase **c. alkaline serene protease** d. streptokinase
26. Enzyme used to dissolve the clots of coronary and cerebral blood vessels is
a. rennin b. cellulase c. alkaline serene protease **d. streptokinase**
27. Enzyme that digests milk protein is
a. rennin b. cellulase c. alkaline serene protease d. streptokinase
28. Enzyme used in textile industry is
a. rennin **b. cellulase** c. alkaline serene protease d. streptokinase

29. Enzyme used in detergents to remove protein stains is
a. rennin b. cellulase c. alkaline serine protease d. streptokinase
30. Enzyme used in Polymerase Chain Reaction is
a. rennin b. cellulase c. alkaline serine protease d. polymerase
31. Bacterium used to control oil pollution is
a. Bacillus thuringiensis
b. Pseudomonas putida
c. Achromobacter
d. Acetobacter
32. Bacterium used as biopesticide
a. Bacillus thuringiensis
b. Pseudomonas putida
c. Achromobacter
d. Acetobacter
33. Interferons were first isolated by
a. Isaac b. Linder Mann c. Langerhan d. both a and b
34. Antiviral proteins are
a. interferons b. vaccines c. antibiotics d. vitamins
35. Which of the following can act as a cloning vector?
a. plasmid b. phasmid c. cosmid d. all
36. The circular DNA found in bacterium is
a. plasmid b. phasmid c. cosmid d. bacteriophage
37. Virus that attack bacteria are called
a. plasmid b. phasmid c. cosmid d. bacteriophage
38. Friendly bacteria that can function as probiotics are
a. lactobacillus b. Bifido c. Vibrio cholrae d. both a and b
39. Industrial production of penicillin is from
a. Penicillium notatum b. Penicillium chrysogenum
c. Streptomyces d. none
40. Vector should exhibit
a. replication

- b. ability to introduce DNA fragment in to suitable cell
c. specific identity
d. all
41. Industrial production of penicillin was carried out by
a. Alexander Fleming b. Florey c. Chain d. all
42. Identify the hybrid vector among the following
a. plasmid b. bacteriophage c. cosmid d. all
43. Which of the following are extensively used in cancer therapy?
a. antibiotics b. vaccines c. interferons d. monoclonal antibodies
44. Which of the following are used in the suppression of transplant organ rejection?
a. antibiotics b. vaccines c. interferons d. monoclonal antibodies
45. Alexander Fleming discovered penicillin, while working with
a. *Penicillium notatum* b. *Penicillium chrysogenum*
c. *Staphylococcus aureus* d. *Streptomyces*
- 46 Which of the following are used to identify antibiotic residues in milk?
a. enzymes b. vaccines c. interferons d. monoclonal antibodies
47. Monoclonal antibodies are used in
a. identification of Chlamydia b. treating auto immune diseases
c. detecting drug levels in body d. all
48. HAT medium used to grow hybridoma cells contains
a. hypoxanthine, aminopterin and thymidine
b. histone, amylopecten and thyroxine
c. histidine, amylase and tryptophan
d. hippuric acid, ammonia and trimethyl aminoxide.
- 49 Fusogen used in monoclonal antibodies is
a. poly vinyl chloride
b. polyethylene glycol
c. HAT medium
d. interferon
50. Monoclonal antibodies were developed by
a. Kohler b. Milstein c. Linder Mann d. both a and b

SURPRISE TEST

1. Calcitonin
 - a. lowers the potassium levels in blood
 - b. increases potassium levels in blood
 - c. lowers calcium levels in blood**
 - d. increases calcium levels in blood

2. Which of the following is known as “emptying of gall bladder?”
 - a. Cholecystokinin**
 - b. secretin
 - c. insulin
 - d. gastrin

3. Insulin dependent diabetes mellitus is
 - a. Type I**
 - b. Type II
 - c. Type III
 - d. Type IV

4. Major Mineralo corticoid is
 - a. cortisol
 - b. cortisone
 - c. aldosterone**
 - d. oestrogen

5. **Stones, bones, groans and moans** are symptoms unique to woman and these are caused by
 - a. Hypoparathyroidism
 - b. hyperparathyroidism**
 - c. Hypothyroidism
 - d. hyperthyroidism

6. Persistent teeth in rabbit are
 - a. canines
 - b. premolars
 - c. incisors**
 - d. molars

7. Teeth absent in milk dentition of rabbit are
 - a. canines
 - b. molars
 - c. incisors
 - d. both a and b**

8. Long, stiff and tactile hair present at the margin of upper lip of rabbit are
 - a. Vibrissae**
 - b. haustra
 - c. teania
 - d. diastema

9. Intricate network of burrows of rabbit are known as
 - a. Rumen
 - b. reticulum
 - c. warren**
 - d. abomassum

10. Entry of food into respiratory tract is prevented during deglutition by
 - a. glottis
 - b. epiglottis**
 - c. uvula
 - d. pyloric sphincter

11. Castle’s intrinsic factor is secreted by
 - a. G cells
 - b. zymogen cells
 - c. oxyntic cells**
 - d. mucous cells

12. Gastrin is secreted by
a. G cells b. zymogen cells c. oxyntic cells d. mucous cells
13. Ions essential for the action of ptyalin are
a. Cl^- b. Ca^{++} c. Mg^{++} d. Fe^{++}
14. Disaccharide that releases two molecules of glucose after digestion is
a. sucrose b. maltose c. fructose d. galactose
15. Nuclease enzyme is present in
a. pancreatic juice b. bile c. saliva d. gastric juice

REPTILIA

1. Snake that is referred to as blind snake
a. Typhlops b. Ptyas c. Eryx d. Natrix
2. Double headed snake is
a. Typhlops b. Ptyas c. Eryx d. Natrix
3. Fresh water snake is
a. Typhlops b. Ptyas c. Eryx d. Natrix
4. Rat snake is the common name of
a. Typhlops b. Ptyas c. Eryx d. Natrix
5. Snake that is considered as friend of farmer
a. Ptyas b. earthworm c. Eryx d. Typhlops
6. Largest snake in the world is
a. Eunectes murinus
b. Green Anaconda
c. Python molurus
d. both a and b

7. Longest snake is
 - a. Eunectes murinus
 - b. Green Anaconda
 - c. Python molurus
 - d. both a and b
8. The depressions found on the lip scales of pythons and boas are called
 - a. loreal pits
 - b. labial pits
 - c. parietal eye
 - d. pineal eye
9. Snake with vestigial hind limbs and pelvic girdle
 - a. Ptyas
 - b. typhlops
 - c. python
 - d. dryophis
10. Neurotoxic venom is found in
 - a. cobra
 - b. krait
 - c. coral snake
 - d. all
11. Haemotoxic venom is found in
 - a. vipers
 - b. cobra
 - c. krait
 - d. sea snake
12. Most poisonous snake is
 - a. Dryophis
 - b. Enhydrina
 - c. Bungarus
 - d. Naja
13. Most poisonous terrestrial snake is
 - a. Dryophis
 - b. Enhydrina
 - c. Bungarus
 - d. Naja
14. Venom of sea snake is
 - a. neurotoxic
 - b. heamotoxic
 - c. hepatotoxic
 - d. none
15. Snake with one row of hexagonal vertebrals is
 - a. Dryophis
 - b. Enhydrina
 - c. Bungarus
 - d. Naja
16. Largest living reptiles are
 - a. crocodiles
 - b. turtles
 - c. anaconda
 - d. dinosaurs
17. Identify arboreal, non-poisonous and viviparous snake
 - a. vipers
 - b. sea snakes
 - c. dryophis
 - d. all
18. Which of the following snakes is/ are viviparous?
 - a. vipers
 - b. sea snakes
 - c. dryophis
 - d. all
19. The bite of which snake has no antivenom?
 - a. Viper
 - b. Enhydrina
 - c. Bungarus
 - d. Naja

20. Animals with longest life span are
a. elephant b. snakes c. crocodiles **d. turtles**
21. Dorsal protective structure found in chelonians is
a. carapace b. plastron c. ductus arteriosus d. gastralia
22. Ventral shell in chelonians is called
a. carapace **b. plastron** c. ductus arteriosus d. gastralia
23. The blood vessel connecting systemic and pulmonary arches in Chelonians is
a. Ligamentum arteriosum
b. Ductus arteriosus
c. Foramen of Panizza
d. truncus arteriosus
24. The blood vessel that connects the left and right systemic arches in Crocodiles is
a. Ligamentum arteriosum
b. Ductus arteriosus
c. Foramen of Panizza
d. truncus arteriosus
25. Largest living turtle is
a. Testudo b. Chelone mydas
c. Dermochelys coriacea d. Trionyx
26. Leather back turtle is
a. Testudo b. Chelone mydas
c. Dermochelys coriacea d. Trionyx
27. Green sea turtle is
a. Testudo **b. Chelone mydas**
c. Dermochelys coriacea d. Trionyx
28. Number of teeth on the jaws of chelonians is
a. 32 b. 44 c. 28 **d. 0**
29. Only reptile without copulatory organ is
a. crocodile **b. sphenodon** c. cobra d. anaconda

30. Caudal autotomy is exhibited by
a. sphendon **b. lizards** c. crocodiles d. snakes
31. Laterally compressed and oar shaped tail is found in
a. krait b. viper **c. sea snakes** d. cobra
32. Lizard that squirts blood from eye when agitated is
a. phrynosoma b. Chameleon c. Calotes d. komodo dragon
33. Biggest lizard in the world is
a. phrynosoma b. Chameleon c. Calotes **d. komodo dragon**
34. Lizard that is wrongly known as blood sucker as the male develops a red patch below the neck during breeding season is
a. phrynosoma b. Chameleon **c. Calotes** d. komodo dragon
35. Lizard that changes its colour according to environmental stimuli is
a. phrynosoma **b. Chameleon** c. Calotes d. komodo dragon
36. Lizard that can rotate its eye ball independently is
a. phrynosoma **b. Chameleon** c. Calotes d. komodo dragon
37. Poisonous lizard among the following is
a. Heloderma horridum b. Heloderma suspectum
c. Ophisaurus **d. both a and b**
38. Limbless lizard is
a. Heloderma horridum b. Heloderma suspectum
c. Ophisaurus d. both a and b
39. Forked tongue is present in the lizard
a. phrynosoma b. Chameleon c. Calotes **d. Varanus**
40. Parietal eye is found in
a. sphendon b. hatteria c. tuatara lizard **d. all**
41. Reptile endemic only to New Zealand is
a. sphendon b. kiwi c. snakes d. both a and b
42. Living fossil in reptiles is
a. Naja b. anaconda **c. sphendon** d. Chelone mydas

43. Snake in which the third supra labial is largest and touches eye and nasal shield is
a. cobra b. coral snake c. Bungarus d. both a and b
44. A small cuneate plate is present between 4th and 5th infra labials in
a. Naja naja b. Bungarus c. Russel's viper d. coral snake
45. When you are going to college, a dead body of a snake is spotted. It contains largest fourth infra labial and a mid dorsal row of hexagonal vertebrals. That snake is
a. Naja naja b. Bungarus c. Russel's viper d. coral snake
46. Snake with three rows of diamond shaped markings on dorsal side is
a. Naja naja b. Bungarus c. Russel's viper d. coral snake
47. Loreal pit of pit vipers is
a. thermoreceptor b. photoreceptor
c. thigmoreceptor d. chemoreceptor
48. Parietal eye in sphenodon is
a. thermoreceptor b. photoreceptor
c. thigmoreceptor d. chemoreceptor
49. Pit less viper among the following is
a. Ancistrodon b. Trimeresurus
c. Russell's viper d. both a and b
50. Pit viper among the following is
a. Ancistrodon b. Trimeresurus
c. Russell's viper d. both a and b
51. Poisonous glands of in venomous snakes are homologous to
a. parotid glands b. Duvernoy's glands c. infra orbitals d. lachrymal
52. Venomous glands in snakes are compressed by
a. masettor b. mandibularis constrictus c. stepedius d. both a and b
53. Anti venom is prepared in India by
a. Haffkine institute, Mumbai b. CCMB, Hyderabad
c. ICT, Hyderabad d. NIN, Hyderabad

54. Golden age of reptiles is
a. coenozoic era
c. Mesozoic era
b. psychozoic era
d. Devonian period
55. Largest living reptile is
a. salt water crocodile
c. Sphaerodactylus ariasae
b. Crocodylus porosus
d. both a and b
56. Smallest reptile is
a. Jaaragua sphaero
c. Sphaerodactylus ariasae
b. Dwarf gecko
d. all
57. When the name of snake that has bitten is known, which of the antivenom is given?
a. Monovalent anti venom
c. Both
b. polyvalent anti venom
d. none
58. The enzyme present in venom of snake is
a. lipase
b. hyaluronidase
c. amylase
d. none
59. Element present in venom of snake is
a. mercury
b, vanadium
c. arsenic
d. gold
60. If one poisonous snake bites another snake
a. the snake that has bitten will die
b. the snake that is bitten will die
c. both will die
d. both will survive

PISCES

1. The first gnathostomes are
 - a. Pisces b. amphibia c. reptiles d. mammals
2. Golden age of fishes is
 - a. Mesozoic era b. coenozoic era c. Devonian period d. Jurassic period
3. World's smallest fish is
 - a. Rhynodon b. Whale shark c. Paedocypris progeniticus d. both a & b
4. Largest fish is
 - a. Rhynodon b. Whale shark c. Paedocypris progeniticus d. both a & b
5. Fish with internal nares are
 - a. dipnoi b. rhipidistians c. lung fishes d. all
6. Dentition in fish is
 - a. polyphyodont b. acrodont c. homodont d. all
7. In bony fish, an evagination formed from fore gut serving for buoyancy or respiration is
 - a. air bladder b. swim bladder c. proctodeum d. both and b
8. Heart of fish is called
 - a. bronchial heart b. venous heart c. arterial heart d. both and b
9. Single circulation occurs in
 - a. fish b. amphibia c. reptiles d. aves
10. Guitar fish is the common name of
 - a. torpedo b. Rhinobatis c. Pristis d. Myliobatis
11. Electric ray is
 - a. torpedo b. Rhinobatis c. Pristis d. Myliobatis
12. Saw fish is
 - a. torpedo b. Rhinobatis c. Pristis d. Myliobatis

13. Fish that is called eagle ray or sea vampire is
a. torpedo b. Rhinobatis c. Pristis d. Myliobatis
14. Indian dog fish is
a. Scoliodon b. Stegostoma c. Sphyrna d. chimaera
15. Hammered headed shark is
a. Scoliodon b. Stegostoma c. Sphyrna d. chimaera
16. Fish known as tiger shark or zebra shark is
a. Scoliodon b. Stegostoma c. Sphyrna d. chimaera
17. Rat fish is
a. Scoliodon b. Stegostoma c. Sphyrna d. chimaera
18. Sting ray is
a. Scoliodon b. Stegostoma c. Trigon d. chimaera
19. In which fish dorsal muscles are modified to form electric organs?
a. torpedo b. Rhinobatis c. Pristis d. Myliobatis
20. Animals that exhibit discontinuous distribution is
a. dipnoi fish b. flightless birds c. flying birds d. both a and b
21. Living fossil in fish is
a. Latimeria b. protopterus c. neoceratodus d. lepidosiren
22. Australian lung fish is
a. Latimeria b. protopterus c. neoceratodus d. lepidosiren
23. South American lung fish is
a. Latimeria b. protopterus c. neoceratodus d. lepidosiren
24. African lung fish is
a. Latimeria b. protopterus c. neoceratodus d. lepidosiren
25. The fish whose face looks like horse, body like crocodile, tail like Chameleon but there is no comparison to labour pains experienced by male is
a. hippocampus b. exocoetus c. echeneis d. amia

39. Dried skin of shark is called
a. isinglass b. shagreen c. dermis d. none
40. Caudal fin Chondrichthyes is
a. diphyccercal b. homocercal c. heterocercal d. none

PHYSIOLOGY

1. Synovial fluid present in the joints is secreted by
a. Synovial membrane b. Hyaline cartilage
c. Joint capsule d. elastic ligaments
2. Milk protein is
a. caesein b. lactose c. galactose d. inulin
3. Milk sugar is
a. caesein b. lactose c. Trehalose d. inulin
4. Insect sugar is
a. caesein b. lactose c. Trehalose d. inulin
5. Site of Cori cycle is
a. muscle b. kidney c. liver d. heart
6. Thin protein present in muscle is
a. actin b. myosin c. myoglobin d. creatine phosphate
7. Thick protein present in muscle is
a. actin b. myosin c. myoglobin d. creatine phosphate
8. Muscle phosphogen present in the muscles of invertebrates is
a. creatine phosphate b. creatine arginase c. myoglobin d. inulin
9. Ca^{++} ions required for muscle contraction are released by
a. sarcolemma b. sarcomere c. sarcoplasmic reticulum d. mitochondria
10. I band contains
a. actin b. myosin c. both d. none

11. Henson's disc of A band contains
a. only actin filaments
b. only myosin filaments
c. both actin and myosin filaments
d. none
13. The space between two Z lines in a muscle is called
a. sarcomere b. Krause's membrane c. Henson's disc d. both a & b
14. Joint between lower jaw and skull is
a. ball and socket b. hinge c. pivot d. saddle
15. Intracellular vehicular system in a muscle useful for transfer of stimulus is
a. sarcolemma b. sarcomere c. sarcoplasmic reticulum d. mitochondria
16. Cross bridges are present on
a. actin b. myosin c. troponin d. all
17. Joint between atlas and axis is
a. ball and socket b. hinge c. pivot d. saddle
18. To and fro swinging movements of myosin cross bridges over actin filaments towards and away from Henson's disc is called
a. Ratchet mechanism b. Walk along mechanism
c. Cori cycle d. Both and b
19. Which of the following is associated with synthesis of urea in liver?
a. Ratchet mechanism b. Walk along mechanism
c. Cori cycle d. Ornithine cycle
20. Obturator foramen is found in
a. pelvic girdle b. pectoral girdle c. skull d. femur
21. Bone formed by the ossification of tendon is
a. femur b. patella c. skull d. palate
22. Active site on the actin are exposed when
a. Ca^{++} bound with troponin
b. Ca^{++} bound with myosin
c. Mg^{++} bound with troponin
d. all

23. Hormone required for metamorphosis is
a. melatonin b. STH **c. thyroxin** d. adrenalin
24. Hormone responsible for precocious sexual development is
a. melatonin b. STH c. thyroxin d. adrenalin
25. Fight/flight/fright hormone is
a. adrenalin b. epinephrine c. insulin **d. both a and b**
26. Hormone required for gluco neogenesis is
a. glucocorticoid b. insulin c. glucagon d. STH
27. Feasting hormone is
a. glucocorticoid **b. insulin** c. glucagon d. STH
28. Fasting hormone is
a. glucocorticoid b. insulin **c. glucagon** d. STH
29. Hypoglycaemic hormone is
a. glucocorticoid **b. insulin** c. glucagon d. STH
30. Hyperglycaemic hormone is
a. glucocorticoid b. insulin **c. glucagon** d. STH
31. If prolactin hormone is injected into frog
a. it prepares the uterus for pregnancy
b. facilitates the development of breast
c. facilitates production of milk
d. none
32. Hormone required for contraction of uterus during parturition is
a. Vasopressin **b. oxytocin** c. thyroxin d. relaxin
33. Hormone required for relaxing pelvic ligaments during parturition is
a. Vasopressin b. oxytocin c. thyroxin **d. relaxin**
34. Hormone required for ejection of milk from breast is
a. Vasopressin **b. oxytocin** c. thyroxin d. relaxin
35. Hormone responsible for inducing labour pains is
a. Vasopressin **b. oxytocin** c. thyroxin d. relaxin

36. Hormone responsible for re absorption of water during urine formation is
a. Vasopressin b. oxytocin c. thyroxin d. insulin
37. Diabetes insipidus is caused by the deficiency of
a. Vasopressin b. oxytocin c. thyroxin d. insulin
38. Diabetes mellitus is caused by the deficiency of
a. Vasopressin b. oxytocin c. thyroxin d. insulin
39. AS gland is
a. adrenal gland b. supra renal gland c. pancreas d. both a & b
40. Cretinism in children is caused by the deficiency of
a. STH b. Thyroxin c. Testosterone d. insulin
41. Eunuch condition is due to the deficiency of
a. STH b. Thyroxin c. Testosterone d. insulin
42. Dwarfism is caused due to the hypo secretion of
a. STH b. Thyroxin c. Testosterone d. insulin
43. Amino acid required for the synthesis of thyroxin is
a. iodine b. tryptophan c. tyrosine d. glycine
44. The endocrine gland with immunological function is
a. Pituitary b. thyroid c. thymus d. gonads
45. Simple goitre is caused due to the deficiency of
a. Fe b. Mg c. Ca d. I₂
46. Main source of iodine for man is
a. sugar b. vinegar c. salt d. butter milk
47. The food stuffs that can be directly absorbed by intestine with out digestion are
a. minerals b. water c. vitamins d. all
48. In buccal cavity the food stuffs that undergo digestion belong to
a. proteins b. carbohydrates c. lipids d. all

49. Churning movements are exhibited by
a. pharynx b. oesophagus **c. stomach** d. intestine
50. HCl is secreted by
a. pharynx b. oesophagus **c. stomach** d. intestine
51. Soft ball of food formed in oral cavity is
a. bolus b. chyme c. chyle d. faecal matter
52. Soft and acidic mix of food formed in stomach is
a. bolus **b. chyme** c. chyle d. faecal matter
53. Alkaline mix of food formed in intestine is
a. bolus b. chyme **c. chyle** d. faecal matter
54. Pseudo rumination is exhibited by
a. cow **b. rabbit** c. horse d. elephant
55. Which of the following food stuffs are digested in intestine?
a. proteins b. carbohydrates c. lipids **d. all**
56. Maximum energy is released from
a. proteins b. carbohydrates **c. lipids** d. vitamins
57. Biocatalysts among the following are
a. enzymes b. carbohydrates c. lipids d. vitamins
58. Curdling of milk is carried out by
a. lipase b. trypsin **c. rennin** d. chymotrypsin
59. Attached blood clot is
a. thrombus b. embolus c. agglutinin d. none
60. Free floating blood clot is called
a. thrombus **b. embolus** c. agglutinin d. none
61. Fibrin stabilizing factor is
a. I b. XII **c. XIII** d. VIII
62. The bundle of His in mammals is originated from
a. SAN **b. AVN** c. Eustachian valve d. Thebesius valve

63. Vestigial valve in the heart of adult rabbit is
a. Eustachian valve b. mitral c. bicuspid d. Thebesius valve
64. Function of gall bladder is
a. storage of bile
b. increasing the concentration of bile
c. producing gall stones
d. both a and b
65. Valve present near the opening of post caval vein in right auricle is
a. Eustachian valve b. mitral c. bicuspid d. Thebesius valve
66. Hinge joint is present in
a. skull b. shoulder c. elbow d. none
67. Ball and socket joint is represented by
a. skull b. shoulder c. elbow d. none
68. Spigelian lobe is found in
a. lung b. liver c. kidney d. heart
69. Sphincter of Oddi is found in
a. Gall bladder b. lung c. kidney d. heart
70. The secretions that lack enzymes is
a. saliva b. saccus entericus c. bile d. gastric juice
71. Intestinal juice that contains enzymes is called
a. saccus entericus b. chyme c. bolus d. saliva
72. Peristalsis is
a. wave like b. involuntary c. gravity independent d. all
73. Hormone produced by stomach
a. HCl b. pepsin c. gastrin d. rennin
74. The enzyme that is not normally found in adults is
a. HCl b. pepsin c. gastrin d. rennin
75. Inactive form of enzymes is called
a. Zymogen b. antigen c. antibody d. chyme

76. In stomach zymogens are converted in to active enzymes in stomach by
a. HCl b. pepsin c. gastrin d. rennin
77. The bacteria associated with food in stomach are killed by
a. HCl b. pepsin c. gastrin d. rennin
78. Zymogen of rennin is
a. HCl b. pepsinogen c. gastrin d. prorennin
79. Zymogen of pepsin is
a. HCl b. pepsinogen c. gastrin d. prorennin
80. Cellulose digestion in man occurs in
a appendix b. ceacum c. both d. none
81. The glands associated with duodenum are
a. Crypts of Liberkaun b. Brunner's glands c. Salivary d. none
82. The bulb like present at the end of ileum in rabbit is
a. sacculus rotandus b. appendix c. ceacum d. anus
83. Which of the following statements is/are wrong?
a. chyme is acidic
b. chyle is basic
c. Bile is useful for emulsification of fats.
d. none
84. Gall bladder is absent in
a. horse b. domestic rat c. both d. man
85. Contraction of heart is called
a. systole b. diastole c. both d. none
86. Pace makers in heart are modified
a. valves b. muscles c. nerves d. none
87. The depression in which pituitary gland is located is called
a. basispheniod b. sella tursica c. infundibulum d. thymus
88. The bone that protects the pituitary gland is
a. basispheniod b. sella tursica c. infundibulum d. thymus

89. The stalk of pituitary gland is called
a. basisphenoid b. sella tursica c. infundibulum d. thymus
90. Two lobes of thyroid gland are connected
a. basisphenoid b. sella tursica c. infundibulum d. isthmus
91. Basal metabolic rate is maintained by
a. thyroxin b. STH c. adrenalin d. testosterone
92. Thymosin hormone is secreted by
a. Thyroid b. thymus c. pituitary d. pineal gland
93. The gland that is known as epiphysis is
a. Thyroid b. thymus c. pituitary d. pineal gland
94. The gland that is known as hypophysis is
a. Thyroid b. thymus c. pituitary d. pineal gland
95. Tropic hormones are secreted by
a. Thyroid b. thymus c. pituitary d. pineal gland
96. Progesterone is secreted by
a. adenohipophysis b. neurohipophysis c. corpus luteum d. none
97. Insulin used for diabetic patients is extracted from
a. man b. whale c. pig d. horse
98. Euphoria or false sense of well being is caused by
a. mineralo corticoids b. gluco corticoids c. sex corticoids d. all
99. Hormones used in the treatment of allergies are
a. mineralo corticoids b. gluco corticoids c. sex corticoids d. all
100. Sex hormones are
a. steroid hormones b. protenaceous hormones
c. amino acids d. all
101. Creatine is chiefly synthesised in
a. kidney b. brain c. muscle d. liver
- 102.

The clot attached to blood vessel is called thrombus and free floating clot is called embolus. Embolus is dangerous as it may settle in vital organs like heart and brain.

Number of bones in children is more than 206 as one ages some bones get fused.

Model Test

1. The test in urochordates is made up of
a. chitin b. tunicin c. lipid d. muramic acid
2. Lamprey is the common name of
a. Petromyzon b. limulus c. scoliodon d. Myxine
3. Hag fish is the common name of
a. Petromyzon b. limulus c. scoliodon d. Myxine
4. Amniotes among the following are
a. fishes, amphibians and reptiles
b. reptiles, aves and mammals
c. reptiles and fishes
d. only amphibians
5. Amnion serves
a. to prevent the desiccation of embryo
b. to protect the embryo from external shocks
c. both
d. none
6. Retrogressive metamorphosis is commonly found in
a. mammals b. aves c. reptiles d. urochordates
7. Identify living fossil among the following
a. Limulus b. sphenodon c. Latimeria d. all
8. Malpighian tubules are the excretory organs in
a. molluscs b. insects c. earthworm d. birds

9. Rasping organ found in snail is
 - a. ospharidium b. radula c. ommatidium d. statocyst
10. Unit of compound eye in insects is
 - a. ospharidium b. radula c. ommatidium d. statocyst
11. The organ found in mollusca that is useful to detect the purity of Water
 - a. ospharidium b. radula c. ommatidium d. statocyst
12. Which of the following is hydrophobic?
 - a. cockroach b. earthworm c. dog d. man
13. The term animalcules is applicable to
 - a. protozoans b. sponges c. insects d. crabs
14. The term partial animals is applicable to
 - a. protozoans b. sponges c. insects d. crabs
15. Identify the wrong pair.
 - a. corals- coelenterate
 - b. pearls- mollusca
 - c. shagreen- fish
 - d. none
16. Uric acid is excreted by
 - a. insects b. reptiles c. aves d. all
17. Olynthus stage is found in
 - a. protozoans b. sponges c. insects d. crabs
18. Canal system is unique to
 - a. protozoans b. sponges c. insects d. crabs
19. Nervous system for the first time in animal kingdom made its appearance in phylum
 - a. Arthropoda b. Mollusca c. Coelenterata d. Echinodermata
20. Water vascular system is unique to
 - a. Arthropoda b. Mollusca c. Coelenterata d. Echinodermata

21. Protein useful in bioluminescence is
a. tunicin b. melanin c. luciferin d. opsin
22. Enzyme useful in bioluminescence is
a. tunicin b. melanin c. luciferin d. luciferase
23. Urochordate that exhibits bioluminescence is
a. Herdmania b. Pyrosoma c. Amphioxus d. Salpa
24. The cavity present in olfactory lobes is
a. rhinocoel b. paracoel c. diacoel d. iter
25. Cavity present in cerebral hemispheres is
a. rhinocoel b. paracoel c. diacoel d. iter
26. Cavity present in diencephalon is
a. rhinocoel b. paracoel c. diacoel d. iter
27. Canal present in mid brain is
a. rhinocoel b. paracoel c. diacoel d. iter
28. Which part of the brain acts as a seat of memory and intelligence?
a. cerebrum b. cerebellum c. medulla oblongata d. diencephalon
29. Involuntary activities are regulated by
a. cerebrum b. cerebellum c. medulla oblongata d. diencephalon
30. Secretion of enzymes and hormones is regulated by
a. cerebrum b. cerebellum c. medulla oblongata d. diencephalon
31. The part of brain affected by the venom of cobra is
a. cerebrum b. cerebellum c. medulla oblongata d. diencephalon
32. Number of optic lobes in mammals is
a.1 b.2 c.3 d.4
33. Arbor vitae are present in
a. cerebrum b. cerebellum c. medulla oblongata d. diencephalon
34. Which of the following neuro transmitter mimics adrenaline?
a. acetyl choline b. sympathin c. noradrenalin d. serotonin

35. Which neuro transmitter is also called 5-HT?
a. acetyl choline b. sympathin c. noradrenalin d. serotonin
36. Neuro neuronal junction is called
a. synapse b. motor end plate c. mediastenum d. diastema
37. Neuro transmitter secreted in motor end plate is
a. acetyl choline b. sympathin c. noradrenalin d. serotonin
38. Neuro muscular junction is called
a. synapse b. motor end plate c. mediastenum d. diastema
39. Function of diaphragm is
a. respiration b. digestion c. excretion d. egestion
40. Plant selected by Mendel for experimentation is
a. sweet pea b. garden pea c. *Pisum sativum* d. Both b and c
41. Skin colour is controlled by
a. multiple allele b. poly genes c. single gene d. none
42. Blood grouping is determined by
a. multiple allele b. poly genes c. single gene d. none
43. Phenotypic ratio in monohybrid cross is
a. 3:1 b. 1:2:1 c. 9:3:3:1 d. 1:1
44. Genotypic ratio in monohybrid cross is
a. 3:1 b. 1:2:1 c. 9:3:3:1 d. 1:1
45. Phenotypic ratio in dihybrid cross is
a. 3:1 b. 1:2:1 c. 9:3:3:1 d. 1:1
46. Disease caused due to the Rh⁻ foetus developing in Rh⁺ mother is
a. HDNB b. Erythro blastosis foetalis c. both d. none
47. Antigens in blood are present on
a. Plasma b. RBC c. WBC d. platelets

48. In a progeny of parents belonging to A and A blood group, which of the following groups are not found?
- a. A and O b. B, AB c. none d. only B

MODEL TEST

1. Which part of the brain is called gyroscope of the body?
a. cerebellum b. cerebrum c. medulla oblongata d. diencephalon
2. The part of the brain referred to as “little brain” is
a. cerebellum b. cerebrum c. medulla oblongata d. diencephalon
3. Butter fly shaped or H shaped endocrine gland is
a. hypothalamus b. thyroid c. pituitary d. adrenal
4. The part in human body that acts as “biological clock” is
a. Supra chiasmatic nucleus b. thyroid c. pituitary d. adrenal
5. Master control centre of endocrine system is
a. hypothalamus b. thyroid c. pituitary d. adrenal
6. Gonadotropin is
a. FSH b. LH c. Thyroxin d. Both a and b
7. Which of the following cells in testis produce testosterone?
a. Sertoli cells b. Leydig cells c. Islets of Langerhans d. Beta cells
8. Relaxing the sphincter of Oddi is the function of
a. Cholecystokinin b. pancreozymin c. bile juice d. both a and b
9. Colostrum, the initial dose of breast milk contains antibody
a. IgG b. IgA c. IgD d. IgE
10. Smallest bones of face are
a. zygomatic bones b. lacrimal bones
c. mandible d. maxillae

11. The strongest and longest bone of facial bone is
 - a. zygomatic bones
 - b. lacrimal bones
 - c. mandible
 - d. maxillae
12. Cheek bones are
 - a. zygomatic bones
 - b. lacrimal bones
 - c. mandible
 - d. maxillae
13. Bone present in lower jaw is
 - a. zygomatic bones
 - b. lacrimal bones
 - c. mandible
 - d. maxillae
14. Example for sesamoid bone is
 - a. zygomatic bones
 - b. lacrimal bones
 - c. mandible
 - d. patella
15. Theory of natural selection was proposed by
 - a. Lamark
 - b. Erasmus Darwin
 - c. Charles Darwin
 - d. Herbert Spencer
16. The term "Survival of the fittest" was coined by
 - a. Lamark
 - b. Erasmus Darwin
 - c. Charles Darwin
 - d. Herbert Spencer
17. Theory of use and disuse was proposed by
 - a. Lamark
 - b. Erasmus Darwin
 - c. Charles Darwin
 - d. Herbert Spencer
18. Germplasm theory was proposed by
 - a. Lamark
 - b. Erasmus Darwin
 - c. Weismann
 - d. Herbert Spencer
19. Philosophie Zoologique was written by
 - a. Lamark
 - b. Erasmus Darwin
 - c. Charles Darwin
 - d. Herbert Spencer
20. Origin of Species was written by
 - a. Lamark
 - b. Erasmus Darwin
 - c. Charles Darwin
 - d. Herbert Spencer
21. Father of embryology is
 - a. Charles Darwin
 - b. Von Baer
 - c. Ernst Haeckel
 - d. Mendel
22. Father of modern embryology is
 - a. Charles Darwin
 - b. Von Baer
 - c. Ernst Haeckel
 - d. Mendel
23. The ship used by Darwin is
 - a. Titanic
 - b. Victoria
 - c. HMS Beagle
 - d. none

24. Islands extensively studied by Darwin are
a. Puerto Rica b. Galapagos c. Malayan archipelago d. Andaman
25. Islands extensively studied by Alfred Russel Wallace are
a. Puerto Rica b. Galapagos c. Malayan archipelago d. Andaman

MODEL TEST

1. Osmoregulation in Protozoans is carried out by
a. contractile vacuole b. food vacuole c. nucleus d. kidney
2. Digestion in Amoeba occurs in
a. contractile vacuole b. food vacuole c. nucleus d. kidney
3. The term protozoa was coined by
a. Dobel b. Goldfuss c. Rosenhoff d. Vonsie Bald
4. Amoeba proteus was first discovered by
a. Dobel b. Goldfuss c. Rosenhoff d. Vonsie Bald
5. The term Arthropoda was coined by
a. Dobel b. Goldfuss c. Rosenhoff d. Vonsie Bald
6. Protozoans were described as acellular by
a. Dobel b. Goldfuss c. Rosenhoff d. Vonsie Bald
7. Contractile vacuole of protozoans is analogous to which organ of man?
a. kidney b. liver c. muscle d. heart
8. The organelle that is referred to as water pulsating vesicle is
a. contractile vacuole b. food vacuole c. nucleus d. kidney
9. Cyclical movements exhibited by food vacuole is called
a. ornithine cycle b. Cori cycle c. gyration d. none
10. Digestion in protozoans is
a. intercellular b. extracellular c. intracellular d. both a and b
11. The protozoan that contains both pseudopodia and flagella is
a. Amoeba b. Euglena c. Mastigamoeba d. Elphidium

12. Protozoan exhibiting alternation of generations is
a. Amoeba b. Euglena c. Mastigamoeba d. Elphidium
13. Euglena derived its name due to the presence of
a. nucleus b. flagellum c. eye spot d. paramylum
14. Reserve food material in Euglena is
a. glycogen b. starch c. glucose d. paramylum
15. In Paramecium transverse binary fission is referred to as
a. symmetrogenic division b. perkinetal division
c. asymmetrogenic division d. both a and b
16. Longitudinal binary fission found in euglena is called
a. symmetrogenic division b. perkinetal division
c. asymmetrogenic division d. both a and b
17. Which of the following parts in paramecium if removed results in failure of locomotion?
a. contractile vacuole b. food vacuole c. motorium d. both a and b
18. Connecting link between protozoa and porifera is
a. volvox b. tenophores c. spongilla d. proterospongia
19. The phylum that exhibits protoplasmic grade of organization is
a. porifera b. chordata c. protozoa d. Arthropoda
20. Number of daughter individuals formed at the end of conjugation in paramecium is
a. 5 b. 6 c. 7 d. 8
21. Number of daughter individuals formed at the end of conjugation in Vorticella is
a. 5 b. 6 c. 7 d. 8
22. A and B amoebae are taken and kept in fresh water. B develops contractile vacuole. Now both are transferred to marine water and the contractile vacuoles present in both disappear. From this it can be inferred that
a. A is fresh water amoeba & B is marine
b. B is fresh water amoeba & A is marine
c. Both are marine

- d. Both are fresh water
23. The protozoan that exhibits plasmaty is
a. amoeba b. paramecium c. opalina d. euglena
24. Kappa particles are present in
a. amoeba b. paramecium c. opalina d. euglena
25. Asexual multiple fission of plasmodium in liver of man is called
a. schizogony b. merogony c. gametogony d. plasmaty
26. Asexual multiple fission of plasmodium in RBC of man is called
a. schizogony b. merogony c. gametogony d. plasmaty
27. Infective stage of Plasmodium to man is
a. tetra nucleate cysts b. sporozoite c. merozoite d. sporoblast
28. Plasmodium was discovered by
a. Ronald Ross b. Golgi c. Laveran d. Grassi
29. Infective stage of Entamoeba to man is
a. tetra nucleate cyst b. sporozoite c. merozoite d. sporoblast
30. Protozoan with undulating membrane is
a. Amoeba b. Entamoeba c. Trypanosoma d. Paramecium
31. Protozoans without locomotory organelles are
a. heliozoans b. rhizopods c. ciliates d. sporozoans
32. Sun animalcules are
a. heliozoans b. rhizopods c. ciliates d. sporozoans
33. Nuclear dimorphism is found in
a. paramecium b. vorticella c. amoeba d. both a and b
34. The nucleus that takes part in conjugation is
a. micronucleus b. macronucleus c. both d. none
35. The nucleus that disappears during the process of conjugation is
a. micronucleus b. macronucleus c. both d. none

36. Identify the right statement.
- protozoans are immortal
 - Cytoplasm in protozoans is not differentiated into somatoplasm and germplasm
 - ciliates are the most advanced protozoans
 - all.
37. Fastest protozoans are
- rhizopods
 - flagellates
 - ciliates
 - sporozoans
38. Posterior daughter paramecium formed during binary fission is called
- proter
 - opisthe
 - clone
 - planula
39. All the daughter paramecia formed from a single parent by asexual reproduction constitute
- proter
 - opisthe
 - clone
 - planula
40. Infraciliary system is found in
- euglena
 - amoeba
 - trypanosoma
 - paramecium
41. Primary host for Plasmodium is
- female Anopheles
 - male Anopheles
 - man
 - Culex
42. Characteristic cells found only in porifera are
- choanocytes
 - renette
 - interstitial cells
 - neuron
43. Characteristic cells found only in nematodes are
- choanocytes
 - renette
 - interstitial cells
 - neuron
44. Digestion in sponges takes place in
- choanocytes
 - renette
 - interstitial cells
 - neuron
45. Food in sponges is stored in the cells called
- choanocytes
 - renette
 - interstitial cells
 - thesocytes
46. Totipotent cells in cnidarians are
- choanocytes
 - renette
 - interstitial cells
 - neuron
47. Characteristic larva of coelenterates is
- trocophore
 - glochidium
 - planula
 - bipinnaria

48. Connecting link between annelida and mollusca is
a. peripatus b. neopilina c. chiton d. pinctada
49. Larva found in phylum Mollusca is
a. veliger b. glochidium c. trocophore d. all
50. Blood sucking annelid is
a. leech b. mosquito c. bed bug d. all
51. Haemolymph is found in
a. mosquito b. cockroach c. honey bee d. all
52. The leg segments in cockroach are commonly called
a. tarsomeres b. femur c. trochanter d. podomeres
53. Strongest segment in leg of cockroach is
a. tibia b. trochanter c. tarsus d. femur
54. Longest segment in leg of cockroach is
a. tibia b. trochanter c. tarsus d. femur
55. Longest tape worm is
a. fish tape worm
b. *Dibothrio cephalus latus*
c. *Taenia solium*
d. both a and b
56. The organ of attachment in *Taenia solium* is
a. scolex b. neck c. strobila d. head
57. Growth zone in *Taenia solium* is
a. scolex b. neck c. strobila d. head
58. New segment in tape worm arise from
a. scolex b. neck c. strobila d. head
59. Fertilisation in tape worm occurs in
a. uterus b. cirrus c. ootype d. fallopian tube
60. Copulatory organ in tape worm is
a. cirrus b. penis c. hemipenis d. clitoris
61. Infective stage of *Taenia solium* to man is
a. *Cysticercus* b. Bladder worm c. oncosphere d. both a and b

62. Infective stage of *Taenia solium* to pig is
a. Cysticercus b. Bladder worm c. oncosphere d. both a and b
63. Other name given to cysticercus is
a. Hexacanth b. Bladder worm c. oncosphere d. both a and b
64. The parts infected by elephantiasis are
a. legs b. breasts b. scrotum d. all
65. *Microfilaria* is the larva of
a. Tape worm b. hook worm c. filarial worm d. round worm
66. Which of the following organs is/ are made up of chitin?
a. setae b. exoskeleton of insects c. both d. none
67. Number of sclerites in the head of cockroach is
a. 5 b. 6 c. 7 d. 8
68. Armed tape worm is
a. *Taenia solium* b. *Taenia saginata* c. *Ascaris* d. *Enterobius*
69. Unarmed tape worm is
a. *Taenia solium* b. *Taenia saginata* c. *Ascaris* d. *Enterobius*
70. Pin worm is
a. *Taenia solium* b. *Taenia saginata* c. *Ascaris* d. *Enterobius*
71. Eutely is seen phylum
a. Nematelminths b. platyhelminthes c. colenterates d. arthropoda
72. Haemoglobin in earth worm is
a. present on RBC
b. found dissolved in plasma
c. present on platelets
d. absent
73. The proglottids that exhibit protandry in tape worm are
a. immature b. anterior mature c. posterior mature d. gravid
74. The proglottids that contain branched uterus filled with eggs
a. immature b. anterior mature c. posterior mature d. gravid

75. Which animals cannot perform both ingestion and egestion at the same time?
a. platyhelminthes b. coelenterates c. arthropods d. molluscs

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