**ANIMAL PHYSIOLOGY-** P21ZC206

**Unit I**

1. Which of the following cells secretes gastric acid in the stomach?

(a) Parietal cells
(b) Chief cells
(c) Acidic cells
(d) Peptic cells

1. Which part of the digestive system contains symbiotic micro-organism?
(a) Duodenum
(b) Rectum
(c) Oral cavity
(d) Caecum
2. Which of the following parts of digestive system contain Brunner’s glands?
(a) Duodenum
(b) Ileum
(c) Oesophagus
(d) Stomach
3. Saliva does not contain

(a) Lysozymes
(b) Immuno globulins
(c) Platelets
(d) Chlorides

1. The enzyme which is not produced by pancreas
(a) Protease
(b) DNase
(c) Amylase
(d) Enteropeptidase
2. The jejunum is the main site for absorption of the following except
(a) Glucose
(b) Bile salts
(c) Amino acids
(d) Fatty acids
3. Enzymes secreted by the brush border of the small intestine digest
(a) Starch
(b) Albumin
(c) Lactose
(d) Galactose
4. Bile juice is formed in ---------
(a) Kidney
(b) Salivary gland
(c) Liver
(d) Lung
5. In the buccal cavity of human, digestion of which of the following get started
(a) Protein
(b) Carbohydrates
(c) Fat
(d) None of the above
6. Saliva helps in digestion of

(a) Starch
(b) Fibre
(c) Proteins
(d) Fats

1. Which is the longest organ of digestive system in human body

(a) Pancreatic duct
(b) Small intestine
(c) Large intestine
(d) Esophagus

1. The --------- mention the name of the hormone secretion triggers

(a) Gall bladder
(b) Pancreas
(c) Crypts of Lieberkuhn
(d) Stomach

1. Cytochrome is

(a) Flavo proteins
(b) Fe containing porphyrin pigment
(c) Glycoprotein
(d) Lipid

1. Which of the following minerals controls growth and body weight
(a) Iodine
(b) Calcium
(c) Phosphorous
(d) Sodium
2. ------------ minerals helps in the regulation of blood volume and blood pressure
(a) Iron
(b) Iodine
(c) Sodium
(d) Phosphorus
3. Excessive intake of calcium in our diet results in -------------
(a) Stroke
(b) Diarrhoea
(c) Constipation
(d) Kidney stones
4. Pomegranate are rich in which minerals?
(a) Phosphorus
(b) Calcium
(c) Manganese
(d) Iodine
5. The hormone gastrin is secreted by

(a) Pancreas
(b)Liver
(c) Stomach
(d) Intestine

1. Which of the following inhibits gastric secretion

(a) Gastrin
(b) Secretin
(c) Cholecystokinin
(d) Gastric inhibitory peptide

1. Which of the following stimulates the secretion of Hcl and pepsinogen

(a) Gastrin
(b) Secretin
(c) Cholecystokinin
(d) Gastric inhibitory peptide

1. Correct enzyme-substrate pair is
(a) Maltose-lactase
(b) Protein-amylase
(c) Carbohydrate-lipase
(d) Casein-rennin
2. During prolonged fasting, in what sequence are the following organic compounds used up by the body?

(a) First carbohydrates, next proteins and lastly lipids

(b) First carbohydrates, next fats and lastly proteins

(c) First fats, next carbohydrates and lastly proteins
(d) First proteins next lipids and lastly carbohydrates

1. Assimilation means
(a) Utilising the water taken by body
(b) Accumulating the food for digestion
(c) Utilisation of absorbed substances
(d) Collecting wastes left after the absorption of required nutrients
2. Emulsification of fat takes place through
(a) Liver enzymes
(b) Bile pigments
(c) Bile salts
(d) Enzymes of small intestine
3. Epithelial cells of the intestine involved in food absorption have on their surface
(a) Phagocytic vesicles
(b) Pinocytic vesicles
(c) Microvilli
(d) Zymogen granules
4. Carrier ions like Na+ facilitate the absorption of substances like
(a) Fructose and some amino acids
(b) Amino acids and glucose
(c) Glucose and fatty acids
(d) Fatty acids and glycerol
5. The glucose is converted into glycogen in liver and stored in
(a) Liver and spleen
(b) Liver and muscle
(c) Liver
(d) Spleen and muscles
6. Which of the following is not a major component of the food?
a) Carbohydrates
b) Proteins
c) Vitamins
d) Fats
7. What is digestion?
a) Conversion of complex bio-macromolecules to simple absorbable forms
b) Conversion of complex biomolecules to a simple form
c) Conversion of complex bio-micromolecules to a simple form
d) Conversion of simple biomolecules to complex form
8. Which of the following vitamin cannot show hypervitaminosis?
a) Vitamin Bb) Vitamin A
c) Vitamin D
d) Vitamin E
9. **In which part of the body digestion of protein begins?**

A.  Pancreas

B.  Stomach

C.  Small Intestine

D.  Large Intestine

1. **The undigested food stored in the liver in the form of carbohydrate is called:**

A.  Pulp

B.  Glucose

C.  Glycogen

D.  Carbohydrate

1. **What is digested by trypsin**

A. Protein

B.  Lipid

C.  Pepsin

D.  Ptylin

1. **Protein is digested into---------------**

A.  Polypeptide, Amino acids

B.  Proteoses, Peptons

C.  Polypeptide, Peptones

D.  Polypeptides, Disaccarides

1. **Lipids are digested into**

A.  Diglyceralehydes, Monoglyceraldehydes

B.  Dinucleotides, Mononucleotides

C.  Dipeptide, Peptides

D.  Fatty acids, Amino acids

1. **Maltose is digested by**

A.  Glucose, Fructose

B.  Glucose, Galactose

C.  Glucose, Sucrose

D.  Glucose, Glucose

1. **Glucose is stored in liver as**

A.  Starch

B.  Glycogen

C.  Cellulose

D.  Sucrose

1. **Absorption of glycerol, fatty acids and monoglycerides takes place by**

A.  Lymph vessels within villi

B.  Walls of stomach

C.  Colon

D.  Capillaries within villi

1. **First step in digestion of fat is**

A.  Emulsification

B.  Enzyme action

C.  Absorption by lacteals

D.  Storage in adipose tissue

1. One of the following is not an amino acid

A) Glycine
B) Hydroxyproline
C) Glutamic acid
D) Choline

1. Which of the following amino acids is essential in infants and non-essential in adults?

A) Lysine
B) Arginine
C) Leucine
D) Tryptophan

1. One of the following is non essential amino acid
A) Tyrosine
B) Valine
C) Methionine
D) Cystine
2. **The cause of short-term or acute vitamin A poisoning is due to**

(a) Eating the liver of Mule deer

(b) Eating the liver of Buffalo

(c) Eating the liver of Ostrich

(d)Eating the liver of Polar bear

1. **Which of the following food sources has the highest levels of vitamin C?**

(a) Parsley

(b) Broccoli

(c) Black currants

(d) Orange juice

1. **Which of the following vitamin helps in blood clotting?**

(a) Vitamin A

(b) Vitamin C

(c) Vitamin D

(d) Vitamin K

1. **Which of the following vitamin functions as both, hormone and visual pigment?**

(a) Thiamine

(b) Retinal

(c) Riboflavin

(d) Folic acid

1. **Which of the following is a fat-soluble vitamin?**

(a) Vitamin B

(b) Vitamin C

(c) Vitamin B12

(d) Vitamin K

1. **Which of the following vitamins serves as a hormone precursor?**

(a) Vitamin A

(b) Vitamin C

(c) Vitamin D

(d) Vitamin K

1. **Weakness in muscles and increase in the fragility of red blood cells is caused due to the \_\_\_\_\_\_\_\_\_\_.**

(a) Deficiency of vitamin E

(b) Deficiency of vitamin D

(c) Deficiency of vitamin C

(d) Deficiency of vitamin A

1. **Which of the following is the scientific name of Vitamin K?**

(a) Ascorbic acid

(b) Phylloquinone

(c) Tocopherol

(d) Pantothenic Acid

1. Which vitamin is required for calcium absorption from the small intestine?

(a) Vitamin A

(b) Vitamin D

(c) Vitamin E

(d) Vitamin K

1. Which vitamin is required for synthesis of the blood clotting proteins?

(a) Vitamin A

(b) Vitamin D

(c) Vitamin E

(d) Vitamin K

1. Which vitamin increases the absorption of iron from the gut?

(a) Vitamin-C

(b) Vitamin-K

(c) Vitamin-D

(d) Vitamin-E

1. Thiamine deficiency leads to\_\_\_\_\_\_\_\_\_\_\_

(a) Beri-beri

(b) Pellagra

(c) Scurvy

(d) Night blindness

1. Pantothenic acid is important for which of the following steps or pathways?

(a) Fatty acid synthesis

(b) Gluconeogenesis

(c) Pyruvate carboxylase

(d) Glycolysis

1. Rickets is caused due to the deficiency of\_\_\_\_\_\_\_\_

a) Vitamin A

b) Vitamin C

c) Vitamin D

d) Vitamin B12

1. Name the vitamin which are essential for the health of the brain?

(a) Vitamin B6

(b) Vitamin B9

(c) Vitamin B12

(d) All the above

1. Pellagra is caused due to the deficiency of which of the following vitamins?
a) Vitamin A
b) Vitamin B12
c) Vitamin B3
d) Vitamin C
2. Which of the following is not a source of vitamin C?
a) Amla
b) Gooseberry
c) Orange
d) Carrot
3. Which of the following vitamins is also known as poor man’s vitamin?
a) Vitamin E
b) Vitamin D
c) Vitamin A
d) Vitamin B

**UNIT - II**

1. During the \_\_\_\_\_\_\_ Process heat energy in formed . a)Circulation

b)Excretion

 c)Digestion

d)Respiration

1. \_\_\_\_\_\_\_\_\_ membrane cover the lungs. a)Ciliated Epithelium

b)Diaphragm

c)Pleura

d) Sternum

1. In the severe cases of COVID 19,which of the following parts of the respiratory system is mostly affected? a)Nasal cavity

b) Trachea

c)Pharynx

d)Alveoli

1. Which one of the following statementis false about the trachea? a)Has C-Shaped rings

b)It splits into the right and left lungs

 c)It is covered by epiglottis

d)Non of the above

1. What prevents the entry of food into the windpipe? a)Epiglottis

b)Larynx

 c)Pharynx

d)Trachea

1. During respiration, the gaseous exchange takes place in \_\_\_\_\_\_\_. a)Trachea and Larynx

b)Lungs and alveoli

c)Alveoli and throat

d)Throat and lungs

1. The end product of aerobic respiration is \_\_\_\_\_\_\_. a)CO2 + CO

b)CO2 + NO

c)CO2+H2O

d)CO2+O2

1. Which of the following pairs has a double circulation pathway? a)Amphibians and Mammals

b)Reptiles and Mammals

 c)Fishes and Birds

d)Birds and Mammals

1. The blood vessels that carry blood from the heart to the various parts of the body are called \_\_\_\_\_\_\_. a)Arteries

b)Veins

c)Septum

d)Capillaries

1. The blood vessels that carry CO2 rich blood from all parts of the body back to the heart?

a)Arteries

b)Veins

c)Capillaries

d)Arterioles

1. Human Heart is covered by a double membrane sac called\_\_\_\_\_\_\_\_. a)Pleura

b)Rura

c)Pericardium

d)Epicardium

1. Which one of the following is NOT true of WBCS? a)Act as soldiers

b)Nucleated

c) Amoeboid (or)circular shape.

d)Size- 18 to 25 um

1. Pace Maker is associated with \_\_\_\_\_\_\_. a)Heart

b)Brain

c)Kidney

d)Ear

1. Which is the largest artery in the body ? a)Pulmonary Artery

b)Aorta

c)Coronary arteries

d)Pulmomary veins

1. The blood bank in human body is \_\_\_\_\_\_\_. a)Heart

b)Liver

c)Spleen

d)Pancreas

1. Life span of the Red blood cell is \_\_\_\_\_\_days. a)60

b)180

c)240

d)120

1. The Red blood cells are produced in \_\_\_\_\_\_\_\_\_\_. a)Bone Marrow

b)Heart

c)Lymph nodes

d)Liver

1. Stored blood becomes brown due to the formation of\_\_\_\_\_\_\_\_\_\_\_. a)Hemoerythrin

b)Methemoglobin

 c)Haemoglobin

d)Oxi-haemoglobin

1. The most commom respiratory pigment in human is \_\_\_\_\_\_\_\_\_. a)Hemoerythrin

b)Hemocyanine

c)Haemoglobin

d)Chlorocruorin

1. More binding of CO2 in blood when PCO2 is \_\_\_\_\_\_\_\_\_\_ and PO2 is \_\_\_\_\_\_\_.

a)High ,High

b)Low ,High

c)Low ,Low

d)High , Low

1. High PCO2 and low PO2 can be found in \_\_\_\_\_\_\_\_\_. a)Tissues

b)Heart

c)Kidney

d)Liver

1. Transport 0f gases in alveoli takes place by \_\_\_\_\_\_. a)Double diffurion

b)Simple diffurion

c)Active transport

d)Passive transport

1. Each Hb can carry a maimum of \_\_\_\_\_\_\_\_\_ oxygen molecules. a)8

b)6

c)4

d)2

1. The red coloured , Fe containing pigment present in the Erythrocyte is \_\_\_\_\_\_\_\_.

a)Albumin

b)Globulin

c)Myoglobin

d)Haemoglobin

1. The binding of Hb with CO2 forms . a)Carbamino – haemoglobin

b)Methemoglobin

 c)Oyhaemoglobin

d)Haemocyanine

1. Carbonic anhydrase plays an important role in the transport of CO2 in \_\_\_\_\_\_\_\_\_\_\_.

 a)Leucocytes

b)Erythrocytes

c)Thrombocytes

d)Platelets

1. Binding of O2 with Hb is primarily related to \_\_\_\_\_\_\_\_. a)Temperature

b)Partial pressure of CO2

c)Partial pressure of O2

d)Hydrogen –ion concentration

1. Which of the following blood cellsplay an important role in blood clotting ?

a)Leucocytes

b)Erythrocytes

c)Neutrophils

d)Thrombocytes

1. Serum differs from blood as it lacks\_\_\_\_\_\_\_\_. a)Clotting factors

b)Antibodies

c)Albumins

d)Globulins

1. This plasma protein is responsible for blood coagulation \_\_\_\_\_\_\_\_\_. a)Globulin

b) Fibrinogen

c)Serum amylase

d)Albumin

1. DNA is not present in \_\_\_\_\_\_\_\_\_. a)An enucleated ovum

b)Hair root

c)Mature RBCs

d)A mature sperma

1. In WBCs , which are the most active phagocytic cells \_\_\_\_\_\_\_\_\_\_\_\_\_.

a)Lymphocytes & Macrophages

b)Neutrophils & Eosinophils

c)Eosinophils & Lymphocytes

 d)Neutrophils & Monocytes

1. Which event is associated with cardiac cycle ? a)Atrial systole

b) Ventricular systole

c)Relaxation period

d)All of the above

1. The atrial depolarization is marked by which wave on the ECG? a)P wave

b)QRS complex

c)T wave

d)U wave

1. What is the time period for ventricular systole? a)0.1 sec

b)0.3sec

c)0.4sec

d)o.5 sec

1. The tricuspid valve is present between \_\_\_\_\_\_\_\_\_\_\_\_. a)Ventricle and pulmonary artery

b)Ventricle and aorta

c)Right auricle and right ventricle

d)Left auricle and left ventricle

1. Bundle of His is a network of \_\_\_\_\_\_\_\_\_\_\_\_. a)Nerve fibersdistributed in ventricles

b)Nerve fibers found throughout the heart

c)Muscle fibers distributed in auricles

d) Muscle fibers present only in the ventriclewall

1. Blood pressure is the pressure excerted by blood against \_\_\_\_\_\_\_\_. a)Artery walls

b)Kidneys

c)Brain

d)Stomach

1. Blood pressure is measured in terms of \_\_\_\_\_\_\_\_\_\_\_. a)Cm Hg

b)mm Hg

c)mm

d)Hg

1. A normal heart rate of an adult at rest is \_\_\_\_\_\_\_\_\_\_\_\_\_. a)125

b)110

c)75

d)60

1. The sino atrial node depolarizes more frequently under the influence of \_\_\_\_\_\_\_\_\_.beats/min.

a)Medulla oblongata

b)Vagus nerve

c)Acetylcholine

d)Nor epinephrine

1. ECG (Electro Cardio Gram ) was developed first by \_\_\_\_\_\_\_\_\_\_\_\_. a) Willem Einthoven

b)Wikelm His

c)Steward

d)Hubert Mann

1. For the normal heart beat , depolarization stimulus originates in \_\_\_\_\_\_\_. a)His – bundle areas

b)Sinuatrial (SA) node

c)Epicardium

d)Atrioventricular (AV) node

1. P wave indicates \_\_\_\_\_\_\_\_\_\_. a)Depolarization of right ventricle

b)Depolarization of left ventricle c)Depolarization of both atria

d)Atria of ventricular conduction time

1. How is the oxygen content monitored in blood ? a)By korotkoff sounds

b)By Fluorescence

c)By luminescence

d)By pulse oximetry

1. What principles does pulse oximetry follow ? a)Beer – lambert law

b)Law of absorbance

c)Law of reflection

d)Law of irradiance

1. The normal BP cuff using instrument is called as \_\_\_\_\_\_\_\_\_\_\_\_. a)Spirometer

b)Sphygmomanometer

c)Stethoscope

d)Oscilloscope

1. What is the normal range of blood pressure ? a)70|40

b)90|60

c)120|80

d)140|90

1. Low oygen supply to tissue is scientifically known as \_\_\_\_\_\_\_\_\_\_\_\_\_. a)Bronchitis

b)Emphysema

c)Asphyxia

d)Hypoxia

1. Emphysema is marked by \_\_\_\_\_\_\_. a)Inflammation of nasal passage

b)Twisting of trachea c)Filling of mucous in lungs

d) Damage of alveolar walls

1. Which of the followingis the function of the trachea? a)Filters the air we breathe

b)Gaseous exchange

c)Exhales the air we breathe

d) All of the above

1. Which of the following function by filtering and keeping the mucus and dirt away from our lungs ? a) Bronchiols

b)Cilia c)Hairs in the lungs

d)All of the above

1. The total number of gases between the external environmentand the lungs \_\_\_\_\_\_.

 a)1 billion

b)800 million c)500 million

d)1500 million

1. The exchange of gases between the external environment and the lungsis called\_\_\_\_\_.

a)Respiration

b)Cellular respiration c)Internal respiration

d)External respiration

1. The maximum volume of air contained in the lung by a full forced inhalation is called \_\_\_\_\_\_\_\_. a)Total lung capacity

b)Vital capacity c)Tidal volume

d)Ventilation rate

1. The amount of air that enters the lungs during normal breathing is called the\_\_\_\_\_\_\_.

a)Vital capacity

b)Tidal volume c)Total lung capacity

d)Expiratory reserve volume

1. Volume of air that will remain in the lungs after a normal expiration is \_\_\_\_\_\_\_\_\_.

a)Inspiratory capacity

b)Vital capacity

c)Functional revidual capacity

d)Expiratory reserve volume

1. After deep inspiration maximum expiration of lungs is called\_\_\_\_\_\_\_. a)Total lung capacity

b)Inspiratory capacity c)Functional residual capacity

d)Vital capacity

1. Partial pressure of O2 in lungs is \_\_\_\_\_\_\_\_. a)100 mm Hg

b)80 mm Hg c)60 mm Hg

d)40mm Hg

1. Hamburger shift is also known as \_\_\_\_\_\_\_. a)Bicarbonate salt

b)Chloride shift c)Pottasium shift

d)Sodium shift

**UNIT III**

1.\_\_\_\_\_\_ is considered as the basic functional unit of the human kidney

a)Exon

b)Nephron

c)Cilia

d)Neuron

2.Bowman capsulesof nephrons are located in \_\_\_\_\_\_\_ part of kidney

a)Cortex

b)Henle’s loop

c)Bladder

d)None of the above

3.The \_\_\_\_\_\_\_\_\_\_ is the point where two or three major renal calyces join together.

 a)Renal pelvis

b)Urethra

c)Bowman’s

d)capsuled.None of the above

4.\_\_\_\_\_\_\_\_\_ are tubes made up of smooth muscle fibres that transport urine from the kidneys to the bladder

a)Renal Papilla

b)Urethra

c)Ureters

d)None of the above

5. Nitrogenous wastes excreted through urine in humans is

a)Trimethylamine oxide

b)Ammonia

c)Uric Acid

d)Urea

6.\_\_\_\_\_\_\_\_\_\_ is a distensible, hollow, muscular sac located in the pelvis, just behind the pubic bone.

a)Bowman’s capsule

b)Urinary bladder

c)Ureter

d)None of the above

7.\_\_\_\_\_\_\_ is responsible for the recovery of water and sodium chloride from the urine.

a)Bowman’s capsule

b)Ureter

c)Loop of Henle

d)None of the above

8.The \_\_\_\_\_\_\_\_ are kidney tissues that are shaped like cones.

a)Renal pyramids

b)Renal pelvis

c)Renal calculi

d)Renal vasculitis

9\_\_\_\_\_\_\_\_ are cells present in the Bowman capsule that wrap around the capillaries of the glomerulus.

a)Zymogenic cells

b)Enterochromaffin-like cells

c)Parietal cells

d)Podocytes

 10.\_\_\_\_\_\_\_\_\_\_\_ is a condition characterized by the presence of red blood cells in the urine

a)Haematoma

b)Haematuria

c)Haematemesis

d)None of the above

11.\_\_\_\_\_\_\_\_\_\_ is a yellow pigment that is formed after dead blood cells are processed in the liver. It is also primarily responsible for the yellow colour of urine

a)Zeaxanthin

b)Urochrome

c)Carotenoids

d)None of the above

12.The \_\_\_\_\_\_\_\_\_\_ is a network of tiny blood vessels located at the beginning of a nephron.

a)Renal calyces

b)Renal pyramid

c)Bowman’s capsule

d)Glomerulus

**13. What types of nitrogenous wastes are excreted by living organisms?**
 a)Ammonia b) Uric acid c)Urea

d) All of the above
**14. In amoeba excretion takes place through the process of:**
 a) Diffusion

b) Infusion
 c) Uricotelic

d) None of the above
**15. Each kidney is made up of a large number of excretory units called:**
 a) Glomerulus

b) Bowman’s Capsule
 c) Nephron

d) Blood capillaries

**16. Which vessel carries blood to the kidneys?**
 a) Renal Arteries

b) Renal Vein
 c) Both A and B

d) none of the above

17. Which of the following is the first step towards urine formation?
 a) Glomerular filtration

b) Ultrafiltration
 c) Secretion

d) Reabsorption

18.On average, how much volume of blood is filtered by the kidneys per minute?
 a) 100-150 ml

b) 500 ml
 c) 1100-1200 ml

d) 5000 ml

19. What is the percentage of cortical nephrons concerning the total nephrons present in the kidneys?
 a) 75-80%

b) 50%
 c) 15-20%

d) 95%

20. How many moles of ATP are required in the formation of urea?
 a)One

b) Two

c) Three

d) Four

21.----------  is a process by which urine is expelled from the body.

 a)micturition

b)reabsorption

 c)secretion

d)excretion

22. On average, a normal adult excretes -------- of urine per day

a) 1 to 1.5 L

b)0.5 – 1.0 L

c) 1.0 – 2.0 L d) 1.0 – 3.0 L

23.Which is the first amino group entering into urea cycle?
 a) carbamoyl phosphate

b) Ornithine
 c) Cituilline

d) Argininosuccinate

24. In urea cycle,the second amino group is transferred to citrulline from \_\_\_\_\_\_\_\_\_\_\_
 a) Aspartate

b) Glutamate
 c) Alanine

d) Guanine

25.The carbon atom source while producing urea in the urea cycle is \_\_\_\_\_\_\_\_\_\_\_
 a) CO2

b) Glucose
 c) Aspartic acid

d) Arginine

26.Two essential pathways for ammonia detoxification are

 a)glutamine synthesis and the urea cycle

b)glutamine synthesis and glycolysis

c)the urea cycle and Kelvins pathway

d)the urea cycle and glycogenolysis

**27.Urea is formed from which toxic material?**

 a) CO2

b) Ammonia

 c) Uric acid

d) All of the above

**28. Urea cycle provides intermediate for which pathway?**

a) Glycolysis

b) HMP-shunt

c) TCA cycle

d) Gluconeogenesis

**29. Where do urea cycle occur?**

a) Muscle cell

b) Liver cell

c) Kidney

d) Heart

**30. From where are the two amino groups of urea derived?**

a) both derived from ammonia b) Both derived from aspartate c) One from ammonia and one from aspartate

d) None of the above

**31. Which of the following is the rate limiting step of urea cycle?**

a) Synthesis of citrulline

b) Synthesis of carbamoyl phosphate

c) synthesis of arginine

d) Synthesis of ornithine

**32. Which of the following is the first reaction of urea cycle?**

a) Formation of ornithine

b) Formation of urea

c) Formation of arginosuccinate

d) None of the above

**33. How many ATP are required for the formation of carbamoyl phosphate?**

a) 2

b) 3

c) 4

d) 1

34. **Carbamoyl phosphate donates its phosphate group to which compound to form citrulline?**

a) Arginosuccinate

b) Ornithine

c) Fumerate

d) Urea

**35. Which of the following compounds are formed in urea cycle?**

a) Arginosuccinate

b) Ornithine

c) Fumerate

d) All of the above

**36. How many ATP is/are converted to AMP and PPi to form arginosuccinate?**

a) 1

b) 2

c) 4

d) 6

**37. Which of the following statement is NOT true?**

a) Four ATP molecules arereqired for synthesis of urea

b) Urea dispose CO2, ammonia and biotin

c) CPS-1 is the principal enzyme of urea cycle

d) High concentration of ammonia, stimulates urea cycle.

**38. Why ornithine and citrulline are not found in the protein structure?**

a) They have excess codons

b) They lack codons

c) The secondary structure lacks hydrogen bonding

d) Both A and C

**39. Which of the following is the significance of urea cycle?**

a) Regulates BP

b) Regulates blood volume

c) Regulate blood flow

d) Regulate blood Ph

**40. What enhances urea synthesis?**

a) increased level of N-acetyl glutamate (NAG)

b) Decreased level of NAG

c)Protein rich diet d) Both A and C

41.What causes kidney stones to form?

 a)abuildup of cholesterol

b)abuildup of mineral solutes combined with calcium

 c)abuildup of mineral solutes, such as oxalates, phosphates, and carbonates

 d)abuildup of calcium

42.How and where is urea formed from ammonia?

 a)the ammonia combines with HCO3–in the liver

 b)the ammonia combines with uric acid in the bladder

 c)the ammonia combines with water in the bladder

 d)the ammonia combines with HCO3–in the kidney

43.What is the advantage of excreting urea rather than

ammonia as waste?

 a)urea is less toxic than ammonia

b)urea requires less water for excretion

 c)urea is more soluble

d)all of the above

44.What is osmoregulation?

 a)the regulation of osmotic pressure in bodily fluids and cells

 b)the regulation of water in cells

 c)he regulation of hydrostatic pressure in bodily fluids and cells

 d)all of the above

45.Which animals produce urea?

 a)cartilaginous fishes

b)insects

 c)bony fishes

d)birds

46.Secretion of K+ bythe distal tubule will be decreased by

 a)Metabolic alkalosis

b)A high K+ diet

 c)Hyperaldosteronism

d)Spironolactone administration

47. Regarding absorption of Na+ in the proximal tubule

 a)The proximal tubule reabsorbs 80% of the filtered sodium load

 b)Absorption of Na+ causes increasing hypertonicity in the tubule lumen

 c)Absorption is powered by the Na+/H+ ATPase

 d)All of the above are true

48. ADH (vasopressin) secretion is increased by

 a)Alcohol

b)Carbamazepine

 c)↑extracellular fluid volume

d)Angiotensin I

49. Which of the following is most permeable to water?

 a)Thin ascending Loop of Henle

b)Distal convoluted tubule

c)Thin descending Loop of Henle

 d)Cortical portion of collecting tubule

50. An increase in the concentration of plasma potassium causes an increase in

 a)Release of rennin

b)Secretion of aldosterone

 c)Secretion of ADH

d)Release of natriuretic hormone

51. -------constantly regulates and balances the amount of water in our blood.

a)ADH

b)ACTH

c)FSH

d)PTH

52. The regulation of body water is called -----

a)Osmoregulation

b)rehydration

c)dehydration

d)None of the above

53. The animals which cannot maintain a constant volume of internal body fluid

a)Osmoregulators

b)homeostatics

c)stenohalines

d)poikilosmotic animals

54. ---- tolerate wide changes in salinity

a)Stenohaline

b)euryhaline

c)Osmoconformers

d)all of the above

55. ----cells in the gills of crustaceans and fishes maintain internal body salt concentration.

a)epithelial cells

b)endothelial cells

c)chloride cells

d)blood cells

**56.Osmoregulators carry out excretion of salt through\_\_\_\_\_\_\_\_\_.**

a) gills

b) fins

c) scales

d) bladder

**57. Most of the marine invertebrates are \_\_\_\_\_\_\_.**

a) Osmoregulation

b) Osmoconformers

c) Both depend on seawater concentration

d) None of the above

**58.  Kidney matrix retains some quantity of urea to maintain\_\_\_\_\_\_\_\_\_.**

a) Metabolism

b) Micturition

c) Desired osmolarity

d) Balance of the body

**59. Which of the following is the product of both osmoregulator and a nitrogenous?**

a) Urea

b) NH3

c) Uric acid

d) All of the above

**60. A person on a long hunger strike, surviving only on the water will**

**have \_\_\_\_\_\_.**

a) Less amino acids in his urine

b) More sodium in his urine

c) Less urea in his urine

d) More glucose in his blood

**Unit - IV**

1. Which of the following ions are necessary in the chemical events of muscle contraction?

 a) Sodium and potassium

b) Sodium and magnesium

c) Calcium and magnesium

d) Sodium and calcium

2. Which one yields ATP required for Muscle contraction?

 a)Myoglobin

b)Creatine Phosphate

c) Both a and B

d)Myosin Answer : B

3. Which of the following is a direct source of energy for muscle contraction?

 a)ATP

b)Creatine phosphate

c)Lactic acid

d)Both (a) and (b)

4. Select the correct statement about muscle contraction.

a) Calcium ions combine with troponin to cause a conformational change in tropomyosin

b) Myosin and actin slide together because of the binding and contraction

 of actin filaments

c) Tropomyosin wraps around myosin and blocks the binding sites between actin and myosin

d) Both A and B

5. Muscle cells are \_\_\_\_\_\_\_\_\_\_\_

a) irregularly shaped

b) cylindrically shaped

c) extremely fragile

d) extremely labile

6. This about muscle fibres is true\_\_\_\_\_\_\_\_\_\_

a) for energy, they depend on anaerobic procedures

b) better adapted for slow sustained activities

 c) myoglobin content is high

d) possess mitochondria in huge numbers

7. Muscle fatigue is due to the accumulation of\_\_\_\_\_\_\_\_\_\_\_\_\_

a) carbon dioxide

b) lactic acid

c) creatine phosphate

d) none of the above

8. Which of the following ions is responsible for unmasking of active binding sites on actin for forming cross-bridge during muscle contraction?

a) Potassium

b) Magnesium

c) Sodium

d) Calcium

9. Sliding theory states that

a) actin and myosin filaments shorten and slide past each other

b) when myofilaments slide past each other, shortening of actin filaments occur

c) when myofilaments slide past each other, shortening of myosin filaments occur

d) actin and myosin filaments do not shorten, they only slide past eachother

10. Which of the following shows ATPase activity during muscle contraction?

a) Actin

b) Tropomyosin

c) Troponin

d) Myosin

11. Which of the following is correct for muscle contraction?

a) Distance between two Z line increases

b) Length of I band increases

c) Length of A band remains constant d) Length of H zone increases

12. Sarcomere is

a) the part between two Z-lines

b) the part between two I-bands

c) the part between two A-lines

d) the part between two H-lines

13. This is a contractile protein of muscles

a) Myosin

b) Tubulin

c) Tropomyosin

d) All of the above

14. Which of the following is a functional unit of striated muscles?

a) Myofibril

b) Cross-bridges

c) Z-band

d) Sarcomere

15. When actin filaments are dragged towards M-line, it is known as

a) recovery stroke

b) refractory stroke

c) power stroke

d) none of the above

16. In the Organization of skeletal muscle, myofilament is part of. \_\_\_\_\_\_\_\_

a) Sarcoplasm

b) sarcosmere

c) sarcoma

d) sarcomere

17. The Myelin sheath is derived from the

a) Microglia

b) Neuroglial cells

c) Schwann cells

d) Nerve cells

18. Nissl’s granules are found in

a) Nerve cells

b) WBC

c) RBC

d) Platelets

19. Which of these is a disease of the myelin sheath?

a) Polio

b) Leprosy

c) Multiple sclerosis

d) Alzheimer

20. This neurotransmitter is not a biogenic amine

a) Serotonin

b) Dopamine

c) Norepinephrine

d) Neuropeptides

21. A nerve impulse jumps from one \_\_\_\_\_\_\_\_\_\_ to another during saltatory conduction

a) Synapse

b) Axon

c) Node of Ranvier

d) Myelin sheath

22. \_\_\_\_\_\_\_\_ are the neurons carrying impulses away from the central nervous system

a) Efferent nerves

b) Afferent nerves

c) Extensors

d) Sensory nerves

23. This amongst the following is found in muscle cells and nerves

a) membrane potential

b) potassium equilibrium potential

c) resting potential

d) sodium equilibrium potential

24. For the first time, research on nerve cells was carried out on this organism

a) Grasshopper

b) Drosophila melanogaster

c) Octopus

d) Giant squid

25. Neurotransmitters can inhibit or excite neurons. \_\_\_\_\_\_\_\_\_ for example, is inhibitory whereas \_\_\_\_\_\_\_\_\_\_ is excitatory

a) GABA; glutamate

b) Glutamate; GABA

c) Serotonin; dopamine

d) None of these

26. Autonomic nervous system affects \_\_\_\_\_\_

a) Reflex actions

b) Sensory organs

c) Visceral organs

d) None of the mentioned

27. Which of the following is an example of the autonomic nervous system?

a) Peristalsis of intestine

b) Swallowing

c) Movement of eyes

d) Knee jerk

28. Which of the following ganglia is not a collateral ganglion?

a) Celiac

b) Superior mesenteric

c) Inferior mesenteric

d) Cervical

29. Catecholamine is derived from \_\_\_\_\_\_\_\_\_\_

a) Acetylcholine

b) Tyrosine

c) Tryptophan

d) Epinephrine

30. The brain area that most directly controls the activity of the autonomic nervous system is the \_\_\_\_\_\_\_\_

a) Pituitary gland

b) Medulla oblongata

c) Cerebellum

d) Hypothalamus

31. Targets of the autonomic nervous system include all of the following except \_\_\_\_\_\_\_\_\_\_

a) Cardiac muscle

b) Endocrine glands

c) Skeletal muscle

d) Exocrine glands

32. Nurilenma provides nourishment for \_\_\_\_\_\_\_\_

a) Nerve fibers

b) Nerve impulse

c) Effectors

d) Receptors

33. Parasympathetic nerve arises from which region of the nervous system?

a) Cranio sacral

b) Lumbar

c) Cervical

d) Thoracolumbar

34. Which of the following is released by Parasympathetic nervous system?

a) Serotonin

b) Acetylcholine

c) Epinephrine

d) Nor epinephrine

35. Which of the following is true about parasympathetic neurons?

a) The nerve fibers are contained in spinal nerves

b) The synapse in terminal ganglia either next to or within the organs innervated

c) They originate in thoracic and lumbar regions of the spinal cord

d) Postganglionic fibers are usually longer than those of sympathetic neurons

36. Nerve fibers are \_\_\_\_\_\_\_\_\_\_

a) Nuclear processes

b) Protoplasmic processes

c) Endoplasmic process

d) Cytoplasmic processes

37. The main function of the cornea present in the human eye is

a) structural support to the eye b) bends light before it reaches the lens

c) changes the shape of the lens enabling image to be focused on the retina

d) contains a concentrated amount of cone cells on the correct orientation

38. The type of cells found in retina are

a) Purkinje cells

b) Schwann cells

c) Neuroglial cells

d) Amacrine cells

39. A cornea transplant is never rejected in humans because

a) it consists of enucleated cells

b) it is a non-living layer c) it has no blood supply d) its cells are least penetrable by bacteria

40. This is an incorrect statement

a) rhodopsin is the purplish-red protein situated in rods only

b) Retinal is a derivative of Vitamin C

c) Retinal is the light-absorbing part of visual photopigments

d) the rods in the retina have rhodopsin, a photopigment while cones have three different photopigments

41. The fovea is the mammalian eye is the centre of the visual field wherein

a) the optic nerve exits the eye

b) only rods are found

c) more rods than cones are found

d) no rods but a high density of cones occur

42. In the human eye, the photosensitive compound is composed of

a) guanosine and retinol

b) transducin and retinene

c) opsin and retinol

d) opsin and retinal

43. The eye lens is

a) Concave

b) Convex

c) Biconcave

d) Biconvex

44. The persistence of vision for the human eye is

a) 1/6th of a second

b) 1/10th of a second

c) 1/16th of a second

d) 1/18th of a second

45. Which part of the ear has no role to play in hearing but is very important?

a) Ear ossicles

b) Organ of Corti

c) Eustachian tube

d) Vestibular apparatus

46. It receives sound vibration and passes to the eardrum

a) outer ear

b) middle ear

c) inner ear

d) eustachian tube

47. The Organ of Corti is present in

a) scala vestibuli

b) scala tympani

c) scala media

d) none of the above

48. The membranous labyrinth contains

a) Cystolymph

b) Otolymph

c) Perilymph

d) Endolymph

49. What is Bioluminescence?

a) Light produced by living organisms

b) Light produced by lightbulbs

c) Glow in the dark paint d) Light produced by glowsticks

50. What is the most common bioluminescent color in marine life?

a)Red

b)Purple

c)Blue

d)Green

51. What is the most common source of bioluminescence in surface waters?

a) Squid

b) Jellyfish

c) Dinoflagellates

d) Crustaceans

52. Bioluminescence is created by the chemical reaction of luciferin, luciferace, and

a) oxygen

b) Hydrogen

c) Carbondioxide

d) Methane

53. The primary uses of bioluminecence are to find food, escape predators, and to

a) find a mate

b) create energy

c) echolocation

d) keep warm

54. Blue light organs on the underside of a fish would most likely indicate the use of bioluminescence for

a) attracting potential prey

b) camoflague from predators below

c) finding a mate d) elluminating potential prey, like a flashlight

55.Comb jellies are bioluminescent, but also have strings of multicolor which are actually

a) Illuminated

b) reflective

c) incandescent

d) iridescent

56. Biological rhythm is best defined as:

a) A heartbeat of an animal

b) The growth of a plant or animal

c) The cyclical activity of an animal

d) A change over time

57. The body’s biological clock is located in the \_\_\_\_\_\_\_\_.

a) hippocampus

b) thalamus

c) hypothalamus

d) pituitary gland

58. \_\_\_\_\_\_\_ cycles occur roughly once every 24 hours.

a) biological

b) circadian

c) rotating

d) conscious

59. \_\_\_\_\_\_\_\_ is a hormone secreted by the pineal gland that plays a role in regulating biological rhythms and immune function.

a) growth hormone

b) melatonin

c) LH

d) FSH

60. The body’s primary circadian pacemaker is the:

a) pineal gland

b) hippocampus

c) suprachiasmatic nucleus

d) amygdala

UNIT - V

1. FSH is produced by

a) Thyroid gland

b) Anterior pituitary gland

 c) Posterior pituitary gland

d) Gonads

2.Which of the following hormones is produced by the pituitary gland in both in male and female but functional only in female

 a) Relaxin

b)Prolactin

 c) Vasopressin pituitary

d) Somatotrophic

3. Trophic hormones are formed by

 a) Anterior pituitary

b) Middle pituitary

 c) Thyroid

d) Posterior pituitary

4.Which of the following is regarded as master gland

 a) Adrenal gland

b) Hypothalamus

 c) Pituitary gland

d) Thyroid

5.what is sheeshans syndrome?

a) The pituitary adenoma is hemorrhagic and necrotic

b)Pituitary gland is infected with virus c)Pituitary gland is infected with bacteria

d)It is the malignancy of the pituitary

6. Which of the following is not released by anterior pituitary gland

a) Prolactin

b) ADH

c) FSH

d) TSH

7.Pituitary gland stimulates the proliferation of

a)Kidney

b)Mammory glands

c)Liver

d)Embryo

8. The main harmone secreted by the thyroid gland

a) T4

b) T3

c) a&b

d) TSH

9. Iodine deficiency can cause

a) Goiter

b) Thyroid cancer

c) Solitary thyroid

d) Tthyroid

10. Graves disease or Basedows disease is due to

a) Hyper activity of adrenal cortex

b) Hypo activity of the thyroid gland

c) Hyper activity of thyroid gland

d) Hypo activity of islets of Langerhans

11. The four small glands in the thyroid gland is known as

a) Adrenal gland

b) Pineal gland

c) Parathyroid gland

d) Endocrine and exocrine gland

12. Sometimes the thyroid symptoms are mistaken for which condition?

a) Menopause

b) Posttraumatic stress

c) Pregnancy

d) Crohns disease

13. Which of these diseases is not related to thyroid glands

a) Cretinism

b) Myxedema

c) Goitre

d) Acromegaly

14. The largest endocrine gland in the body

a) Salivary

b) Thyroid

c) Pineal

d) Parotid

15. Which of the following components is secreted by the thyroid gland

a) Calcitonin

b) Progesterone

 c) Estrogen

d) Saliva

16. Hypothyroidism in adult causes

a) Myxedema

b) Eretinism

c) Diabetes

d) Obesity

17. What hormone does the parathyroid produce

a) Calcitonin

b) PTH

c) PFH

d) Insulin

18. How many parathyroid glands are present

a) 4

b)3

c)2

d)1

19. What are the types of cells found in parathyroid gland

a) Alpha and beta cells

b) Chief cells and oxyphil cells

c) Parafollicular cells

d) Pituicytes cells

20. Where are parathyroid glands present

a) Posterior surface of thyroid

b) Stomach

 c) Kidney

d) Breastbone

21. The parathyroid gland arises from which part of embryo

a) Ectoderm

b) Mesoderm

c) Endoderm

d) None

22. Stroma of thyroid gland is enclosed by which part

 a) Isthumus

b) Follicles

c) Capsule

d) Colloid

23. Adrenal gland is originated from which part of embryo

a) Mesoderm and ectoderm

b) Endoderm and mesoderm

c) Endoderm

d) Ectoderm

24. Which glands have dual origin nature

a) Thyroid glands

b) Parathyroid glands

c) Thymus gland

d) Adrenal gland

25. Adrenal glands are which of the following characteristic

a) Unpaired

b) Paired

c) Paired

d) Unone

26. The location of adrenal glands are

a) In brain

b) In neck

c) In gonads

d) Top of kidney

27. Adrenal gland is in which colour

a) Reddish colour

b) Black in colour

c) Yellowish in colour

d) None

28. Addisons disease is caused by

a) Deficiency of mineralocorticoids

b) Deficiency of glucocorticoid c) Deficiency of sexcorticoids d) Done

29. Which are the two hormones released from adrenal medulla

a) Adrenaline and noradrenaline

b) Thyroxine and parathyrmene

c) Throxine and calcitosin

d) Calcitonine and parathormone

30. One of the constituents of the pancreatic juice that is poured in to the duodenum in human is

a) Trypsin

b) Enterokinase

c) Trpsinogen

d) Chymotrypsin

31. Pancreatic can be produced by the following drug

a) Ciprofloxacin

b) Nalidixic acid

c) Calchicine

d) L –Asparaginase

32.The islets of Langerhans is found in

a) Stomach

b) Alimentary canal

c) Pancreas

d) Liver

33. Secretion of pancreatic juice is triggered by

a) Secretin

b) Enterogastrone

c) Gastrin

d) Enterokinase

34. This is most diagnostic investigation for acute pancreatitis

a) Serum LDH

b) Serumamylase

c) Serumlipase

d) Serum –P- isoamylase

35. Whic part of pancreas produces and secretes insulin

a) Glomerulus

b) Bowmans capsule

c) Islets Langerhans

d)Loop of Henle

36. Which cells produce insulin

a) Alpha cells of pancrease

b) Beta cells of pancrease

c) Delta cells of pancrease

d) F- cells of pancrease

37. Gonadotropic hormone is released by

a) Gonads

b) Germlayers

c) Neurohypophysis

d) Adenohypophysis

38. Which of the following hormone is responsible for the secretion of milk after parturition

a) I CSH

b) ACTH

c) LH

d) Prolactin

39. Menstruation is due to

a) Reduction of FSH

b) Increase of LH

c) Reduction in estrogen and progesterone

d) Decrease in LH

40. Estrogen and testosterone are steroid hormones and most likely to bind

a) Cytoplasmic receptors

b) Membrane ion channels

c)Enzyme linked membrane

d)G- Protein

41. Testosterone is secreted by

a) Sertoli cells

b) Leydigcell

c) Insulin

d) Pheromones

42. Male sex hormone is

a) Estrogen

b) Androgen

c) Insulin

d) Pheromones

43. Ovaries are also known as

a) Male gonads

b)Male testis

c)Female gonads

d) Female tubes

44. Hormone receptors are

a) Glycolipids

b) Lipids

c) Polysaccharides

d) Proteins

45. What type of hormone is glucogon

a) Iodothyronines

b) Steroids

c) Peptide

d) Amino acid

46. Hypothalamic hormones are

 a) Peptides

b) Steroids

 c) Iodothyronines

d) Amino acid

47. Adrenaline is derived from

 a) Lipopolysaccharides

b) Amino acids

 c) Lipids

d) Sugars

48. Which of these is a secondary messenger?

 a) Ca2+

b)Mg2+

 c) Na+

d) K+

49. By which of the following fertilization of pregnancy is prevented

 a) Contraception

b) Coitus

c)Cchorion

d) Lactation

50. IP3 is a

 a) Second messenger

b) Membrane receptor

 c) Intracellular receptor

d) Nuclear receptor

51. A reproductive cycle that is found in all the female mammals except human is called

a) Oestrous cycle

b) Menstrual cycle

c) Menopause

d) Ovulatory cycle

52. The periodic reproductive cycle in human females is commonly known as

a) Oestrous cycle

b) Menstrual cycle

c) Proestrous cycle

d) Menopause

53. In human females the periodic reproductive cycle is completed in approximately

a)10 days

b)18days

 c)28days

d)40days

54. The female reproductive cycle may be disturbed by

a) Malnourishment only

b) Emotional stress only

 c) Over eating

d) Malnourishment and emotional stress

55. Graafian follicle is characteristically found in the

a) Ovary of the frog

b) Testis of mammal

c) Thyroid of mammal

d) Ovary of mammal

56. The nutritive medium for the ejaculated sperms is

a) Fallopian tube

b) Vaginal fluid

 c) Seminalfluid

d) Uterine lining

57. Which of the following removed during menstrual cycle

a) Fertilization of egg

b) Fertilized egg

c) Epimetrium

d) Endometrium

58. Secretory phase or premenstrual phase

a)14 – 15 days

b)15 -18 days

c)19 -21 days

d) 21 -28 days

59. The phase during which mensus occur is called

a) Primary phase

b) Follicular phase

c) Menstrual phase

d) Iuteal phase

60. The follicular phase is also called as

a) Menstrual phase

b) Luteal phase

c) Proliferative phase

d) Secretory phase

**Answer Keys**

**UNIT I**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1. a | 2. d | 3. a | 4. c | 5. d | 6. b | 7. c | 8. c | 9. b | 10. a |
| 11. b | 12. b | 13. b | 14. a | 15. c | 16. d | 17. a | 18. c | 19. d | 20. a |
| 21. d | 22. b | 23. c | 24. c | 25. c | 26.a | 27. c | 28. c | 29. a | 30. a |
| 31. b | 32. c | 33. a | 34. b | 35. c | 36. a | 37. b | 38. a | 39. a | 40. d |
| 41. b | 42. a | 43. d | 44. c | 45. d | 46. b | 47. d | 48. c | 49. a | 50. b |
| 51. b | 52. d | 53. a | 54. a | 55. a | 56. b | 57. d | 58. c | 59. d | 60. b |

**UNIT- II**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1) D | 2) C | 3) D | 4) C | 5) A | 6) B | 7) C | 8) D | 9) A | 10) B |
| 11) C | 12) D | 13) A | 14) B | 15) C | 16) D | 17) A | 18) B | 19) C | 20) D |
| 21) A | 22) B | 23) C | 24) D | 25) A | 26) B | 27) C | 28) D | 29) A | 30) B |
| 31) C | 32) D | 33) D | 34) A | 35) B | 36) C | 37) D | 38) A | 39) B | 40) C |
| 41) D | 42) A | 43) B | 44) C | 45) D | 46) A | 47) B | 48) C | 49) D | 50) D |
| 51) A | 52) B | 53) C | 54) D | 55) A | 56) B | 57) C | 58) D | 59) A | 60) B |

**UNIT- III**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,b | 2,a | 3,a | 4,c | 5,b | 6,b | 7,c | 8,a | 9,d | 10,b |
| 11,b | 12,d | 13,d | 14,a | 15,c | 16,a | 17,a | 18,c | 19,a | 20,c |
| 21,a | 22,a | 23,a | 24,a | 25,a | 26,a | 27,b | 28,c | 29,b | 30,c |
| 31,b | 32,d | 33,a | 34,b | 35,d | 36,a | 37,b | 38,b | 39,d | 40,d |
| 41,b | 42,a | 43,d | 44,a | 45,a | 46,c | 47,d | 48,b | 49,c | 50,b |
| 51,a | 52,a | 53,c | 54,b | 55,c | 56,a | 57,b | 58,c | 59,a | 60,c |

**UNIT- IV**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1. C
 | 1. b
 | 1. d
 | 1. a
 | 1. b
 |
| 1. a
 | 1. b
 | 1. d
 | 1. d
 | 1. d
 |
| 1. c
 | 1. a
 | 1. a
 | 1. d
 | 1. c
 |
| 1. d
 | 1. c
 | 1. a
 | 1. c
 | 1. d
 |
| 1. c
 | 1. a
 | 1. c
 | 1. d
 | 1. a
 |
| 1. c
 | 1. a
 | 1. d
 | 1. b
 | 1. b
 |
| 1. c
 | 1. a
 | 1. a
 | 1. b
 | 1. b
 |
| 1. d
 | 1. b
 | 1. d
 | 1. c
 | 1. b
 |
| 1. d
 | 1. d
 | 1. d
 | 1. c
 | 1. d
 |
| 1. a
 | 1. c
 | 1. d
 | 1. a
 | 1. c
 |
| 1. c
 | 1. a
 | 1. a
 | 1. b
 | 1. a
 |
| 1. c
 | 1. c
 | 1. b
 | 1. b
 | 1. c
 |

**UNIT- V**

| 1) B | 2) B | 3) A | 4) C | 5) A | 6) B | 7) B | 8) C | 9) A | 10) C |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 11) C | 12) A | 13) D | 14) B | 15) A | 16) A | 17) B | 18) A | 19) B | 20) A |
| 21) C | 22) D | 23) A | 24) D | 25) B | 26) D | 27) C | 28) A | 29) A | 30) C |
| 31) D | 32) C | 33) A | 34) C | 35) C | 36) B | 37) D | 38) D | 39) C | 40) A |
| 41) B | 42) B | 43) C | 44) D | 45) C | 46) A | 47) B | 48) A | 49) A | 50) A |
| 51) A | 52) B | 53) C | 54) D | 55) D | 56) C | 57) D | 58) A | 59) C | 60) C |