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B.Sc. [Medical (Part-I)]

BF/Supp/2008/05

Anatomy

M.M. : 100

Time : 3 Hours

Note: Attempt all questions.

Illustrate your answers with suitable diagrams.

1. **Describe the femoral nerve under the following headings:** [3x4=12]
 - a. Origin.
 - b. Course.
 - c. Branches.

 2. Enumerate the structures under cover of Gluteus Maximus and describe the Gluteal muscles with a note to the applied anatomy. [16]

 3. **Describe Kidneys under the following headings:** [4x4=16]
 - a. Gross anatomy.
 - b. Posterior relations.
 - c. Blood supply.
 - d. Applied anatomy.

 4. Classify and describe different types of Muscles of body. Add a note to the histological structure of different types of muscles. [20]

 5. **Describe briefly:** [5x4=20]
 - a. Derivatives of Endoderm.
 - b. Primitive streak.
 - c. Lesser Sac.
 - d. Pudendal Canal.
 - e. Femora Sheath.

 6. Describe Anal-Canal. Add a note to its applied anatomy. [16]
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B.Sc. [Medical (Part-I)]
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Physiology

M.M. : 100

Time : 3 Hours

Note: Attempt any SIX questions, except the last **(Q.NO. 8)** which is **COMPULSORY**.

1. Describe the structure, synthesis, functions, types and catabolism of Haemoglobin. [16]
 2. Define Anaemia and describe various types of Anaemia. [16]
 3. Describe the composition, functions and regulation of Gastric Juice. [16]
 4. Describe the mechanism of Clotting in detail. [16]
 5. Describe the structure and various transport processes occurring across the Cell membrane. [16]
 6. Describe the role of Renin angiotensin system and atrial natriuretic peptide in regulating the volume and concentration of body fluids. [16]
 7. **Write notes on:** [16]
 - a. Digestion and Absorption of Fat.
 - b. Functions of Plasma proteins.
 8. **Write short notes on:** [20]
 - a. Juxtaglomerular apparatus.
 - b. Dietary fiber.
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Biochemistry

M.M. : 100

Time : 3 Hours

Note: Attempt any FIVE questions.

1. **Write short notes on:** [4x5=20]
 - a. Polysaccharides.
 - b. Inhibitors of enzyme activities.
 - c. Muta rotation of glucose.
 - d. Classification of amino acids.

 2. Write in detail about Vitamin C and Vitamin K. [10+10=20]

 3.
 - a. Write a note on Plasma proteins. [10]
 - b. Discuss about detoxification of foreign compounds in our body. [10]

 4. Discuss about various colour reactions of Carbohydrate. [20]

 5. Define Lipids. How to classify lipids. Write a detailed note on Phospholipids. [20]

 6. **Write short notes on:** [4x5=20]
 - a. Medical uses of radio-isotopes.
 - b. Blood buffers.
 - c. Differences between RNA and DNA.
 - d. Isoenzymes.
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Medical Statistics & Research Methodology

M.M. : 80

Time : 3 Hours

Note: Use of Simple Calculator is allowed.

SECTION-A

All questions are Compulsory. Each question carries Four marks. [5×4=20]

1. What are limitations of Sampling?
2. Define positional average.
3. Define Quota sampling.
4. Define controlled and uncontrolled observations.
5. What is standard error?

SECTION-B

Attempt any Four Questions. Each Question carries 15 marks.

1. a. Discuss the role of Interview method in the collection of data.
b. Find the median, lower and upper quartiles & 60th percentile for the following distribution.

Marks: 0-10 10-20 20-30 30-40 40-50 50-60 60-70 70-80

Frequency: 2 18 30 45 35 20 6 3

Of students

[7+8=15]

2. a. Discuss the simple random sampling and its methods. [7]
b. Find mean and standard deviation of the following distribution:
C.I. : 15-20 20-25 25-30 30-35 35-40 40-45 45-50 50-55
Frequency: 2 5 8 11 15 20 20 17
C.I. : 55-60 60-65 65-70 70-75
Frequency: 16 13 11 5 [8]

3. a. Discuss the advantages of sample surveys over the census surveys.
b. Calculate the Co-efficient of correlation for the following data:
X: 78 36 98 25 75 82 90 62 65 39
Y: 84 51 91 60 68 62 86 58 53 47
[7+8]

4. a. Discuss the steps in testing of the hypothesis. [7]
b. Discuss the preparation of the scientific reports. [8]

P.T.O.

5. a. Differentiate between Correlation and Regression. [7]
b. Given the following data:
X: 1 2 3 4 5 6 7 8 9
Y: 9 8 10 12 11 13 14 16 15
Find the equations of the lines of regression. [8]
6. Write short notes on: [3x5=15]
a. Problems of representative sample.
b. Usefulness of percentiles in medical statistics.
c. Confidence limits.
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B.Sc. [Medical (Part-II)]

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Anatomy

M.M. : 100

Time : 3 Hours

Note: Attempt all questions.

1. **Enumerate:** [5x3=15]
 - a. Branches of Axillary nerve.
 - b. Branches of Superior Mesenteric artery.
 - c. Structure in inlet of Thorax.
 - d. Structures passing deep to extensor retinaculum at wrist.
 - e. Abductor of Shoulder.
 2. **Draw labeled diagram to show:** [4x5=20]
 - a. Histology of Testis.
 - b. Histological structure of Ileum.
 - c. Histological structure of Cardiac Muscle.
 - d. Histological structure of Hyaline Cartilage.
 3. **Describe the boundaries and contents of Cubital Fossa.** [16]
 4. **Write briefly on:** [3x7=21]
 - a. Meckle's diverticulum.
 - b. Annular Pancreas.
 - c. Relations of Left Kidney.
 5. **Write short notes on:** [2x7=14]
 - a. Lymphatic drainage of Stomach.
 - b. Adductor Canal.
 6. **Write briefly on:** [2x7=14]
 - a. Erb's Palsy.
 - b. Wrist drop.
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B.Sc. [Medical (Part-II)]

BF/2008/05

Physiology

M.M. : 100

Time : 3 Hours

Note: Attempt any FIVE questions. Illustrate your answers with suitable diagrams.

1. Define Blood Pressure. What are the factors affecting it. Write down the mechanism of regulation of arterial blood pressure in human beings. [20]
2. What are the differences between Myelinated and Unmyelinated nerves. Describe the process of Myelinogenesis in peripheral nerves. [20]
3. **Draw labeled diagrams of the following:** [10+10]
 - a. Oxygen(O_2) - Haemoglobin dissociation curve.
 - b. Action potential in Neuron.
4. **Write short notes on:**
 - a. Chloride shift. [7]
 - b. Diffusion capacity of lungs. [7]
 - c. S-T segment of ECG. [6]
5. **Write in brief on:**
 - a. Starling Law of Heart. [7]
 - b. Role of Chemoreceptors in regulation of Respiration. [7]
 - c. Cardiac pacemaker. [6]
6. **Write briefly on:**
 - a. Vitamin 'D'. [7]
 - b. Obesity. [7]
 - c. Pellegra. [6]
7. **Write short notes on:**
 - a. Isotonic and Isometric contraction of muscles. [7]
 - b. Heart sounds. [7]
 - c. Orthodromic conduction in nerve. [6]
8. Discuss the mechanism of absorption of Fat. [20]

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B.Sc. [Medical (Part-II)]

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Biochemistry

M.M. : 100

Time : 3 Hours

Note: Attempt any FIVE questions.

1. a. Describe the process of Glycolysis and give energetics of aerobic and anaerobic glycolysis. [10]
 b. Give an account of regulation of Glycogen synthesis and breakdown. [10]
 2. a. Describe the process of beta oxidation and energetics. [10]
 b. Discuss two conditions where excess production of Ketone bodies occurs and clinical presentation due to these conditions. [10]
 3. a. Give an account of transamination with two examples. What is the metabolic importance of transamination. [10]
 b. Discuss the steps of catabolism of Phenyl alanine and inborn errors associated with them. [10]
 4. a. Give sources of Carbon and nitrogen in purines and pyrimidines. [10]
 b. **Write short notes on:**
 i) Orotic aciduria. [5]
 ii) Lesch Nyhan syndrome. [5]
 5. a. Describe the process of synthesis and secretion of thyroid hormone. [10]
 b. Discuss important compounds synthesized from Cholesterol. [10]
 6. **Write short notes on:**
 a. Calcium homeostasis. [8]
 b. Metabolic function of Selenium. [6]
 c. Role of Cholesterol in atherosclerosis. [6]
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Anatomy

M.M. : 100

Time : 3 Hours

Note: Attempt any FIVE questions. Illustrate your answers with suitable diagrams.

1. Describe the origin, course, relations and branches of Mandibular nerve. [20]
2. Classify various dural venous Sinuses and describe in detail Cavernous sinus. Add a note on applied anatomy of this sinus. [20]
3. **Describe briefly:** [2x10=20]
 - a. Hyoglossus muscle and its relations.
 - b. Muscular triangle.
4. **Draw and label:** [4x5=20]
 - a. Nerve supply of lateral wall of nasal cavity.
 - b. Histology of thyroid gland.
 - c. Circle of Willis.
 - d. Cerebellar nuclei.
5. **Write short notes on:** [4x5=20]
 - a. Klinefelter's syndrome.
 - b. Lateral pterygoid muscle.
 - c. Facial artery in face.
 - d. Dangerous area of face.
6. Describe in detail muscles of Pharynx. Add a note on nerve supply of Pharynx. [20]
7. **Write short notes on:** [4x5=20]
 - a. Space of Burns.
 - b. Arachnoid granulations.
 - c. Branches of basilar artery.
 - d. Sensory supply of tongue.
8. **A. Enumerate[Give names only]:** [4x3=12]
 - a. Structures passing through foramen ovale.
 - b. Groups of fibres passing through inferior Cerebellar peduncle.
 - c. Nerve supply of Scalp.
 - d. Branches of external carotid artery in Carotid triangle.

B. Write briefly: [2x4=8]

 - a. Radiographic anatomy.
 - b. Congenital anomalies of tongue.

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B.Sc. [Medical (Part-III)]

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Physiology

M.M. : 100

Time : 3 Hours

Note: Attempt any FIVE questions.

1. Describe the functions of Hypothalamus. [20]
 2. Enumerate the hormones secreted by anterior Pituitary gland. Describe functions of growth hormone and its clinical significance. [20]
 3. **Write on following:** [10+10]
 - a. Physiology of pregnancy.
 - b. Visual pathway.
 4. **Write actions of following:** [10+10]
 - a. Testosterone.
 - b. Vasopressin.
 5. **Compare and contrast the following:** [10+10]
 - a. Conduction and Neural deafness.
 - b. Cretinism and Myxoedema.
 6. **Write notes on following:** [4x5=20]
 - a. Referred pain.
 - b. Tetany.
 - c. Withdrawl reflex.
 - d. Oral contraceptive pills.
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B.Sc. [Medical (Part-III)]
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Biochemistry

M.M. : 100

Time : 3 Hours

Note: Attempt any FIVE questions.

1. Describe the process of translation in Eukaryotes. Mention various posttranslational modifications. [20]

 2. Write briefly on: [4x5=20]
 - a. Telomerase.
 - b. PCR.
 - c. Gene therapy.
 - d. Eukaryotic promoter.

 3.
 - a. Describe the principles of ELISA using a flow diagram and write its applications. [10]
 - b. Describe the genetic basis of antibody diversity. [10]

 4.
 - a. Draw a labeled diagram of Electron transport chain and show the sites of various inhibitors. Write the mechanism of action of Uncouplers. [10]
 - b. Draw a labeled diagram of Replication fork. [10]

 5.
 - a. Write biochemical findings in Obstructive Jaundice. [5]
 - b. Enumerate various tests for Kidney function. [5]
 - c. Describe Type I hypersensitivity reaction. [5]
 - d. Define vaccine and enumerate different types. [5]

 6. Define Immunity and describe its various types. [20]
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B.Sc. [Medical (Part-III)]

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Psychology & Education
(New Scheme)

M.M. : 80

Time : 3 Hours

Note: Attempt any FIVE questions.

1. Describe characteristics of Adolescence. [16]
2. What problems are faced by Indian youth in the field of education, Social life and future? [16]
3. Aggression and Violence amongst Indian youth is a serious concern of society and nation – Explain? [16]
4. Differentiate between Drug use and Drug abuse? Describe its causes and treatment? [16]
5. How knowledge can be evaluated? What is its significance. [16]
6. What is Viva-Voce examination? Describe its merits and demerits? [16]
7. What is the importance of Internet and Websites in medical education? [16]
8. Why Guidance and Counselling is essential to youth? [16]
