



DMLT/DMRT EXAMINATION BOARD, ODISHA
FIRST YEAR D.M.L.T. ANNUAL Exam - 2024
(2022 Admission Batch)

QUESTIONS (PAPER-I)

FULL MARKS: 70

Time: 3 Hours

Answer all questions

(USE SEPARATE ANSWER BOOK FOR SECTION-A & SECTION-B)

SECTION-A (ANATOMY - 35 MARKS)

(5 x 5 = 25 marks)

1. Answer (any five)

- Name the four primary tissues present in the human body & give examples. Write in brief about the structures & functions of each type of tissue.
- Draw a labelled diagram of the human heart. Name the arteries supplying the heart.
- Draw a labeled diagram of the Gastrointestinal Tract. Write the functions of the gallbladder.
- Draw a labeled diagram of the Respiratory Tract. Name the arteries supplying the lungs.
- Classify the joints; Give examples of each. Write briefly about the ball and socket type of joint.
- Describe the organs of the Reticuloendothelial System. Describe the structure & functions of the Spleen.

2. Fill in the blanks

(1 x 10 = 10 marks)

- The bone present in the upper arm is called _____. (Radius / Humerus)
- _____ is the first Cranial nerve. (Olfactory / Optic).
- _____ is the largest & strongest bone of the human skull (Maxilla / Mandible).
- Smooth muscles are _____ in nature (Voluntary / Involuntary)
- Lining epithelium of ureter is _____ (Squamous / Transitional).
- _____ bone is known as the Collar bone. (Scapula / Clavicle)
- Brain stem consists of Pons, Medulla & _____ (Hind brain / Mid brain).
- _____ joint is an example of ball & socket type of joint (Knee joint / Hip joint).
- Spermatogenesis occurs in the _____ (Vas deferens / Seminiferous tubules)
- When a person lies down with face looking upwards, that position is called _____ (Supine / Prone)

SECTION-B (PHYSIOLOGY - 35 MARKS)

1. Answer (any three)

(5 x 3 = 15 marks)

- a. Write down the composition & general functions of blood.
- b. Write down the normal composition of urine.
- c. Name the endocrine glands. Write in brief about the hormones secreted by the *Anterior Pituitary Gland*.
- d. Write down the formation, composition & functions of the Cerebrospinal fluid.

2. Write True (T) or False (F)

(2 x 5 = 10 marks)

- ✓ a. The amount of air that moves into the lungs with each inspiration is called the tidal volume.
- ✓ b. Estrogen & testosterone are ovarian hormones.
- ✗ c. Sweat glands are endocrine glands.
- ✓ d. Genetic male is 44XX.
- ✓ e. Heparin is a naturally occurring anti coagulant.

3. Fill in the blanks

(2 x 5 = 10 marks)

- a. Hydrochloric acid is secreted from _____ (Parietal cells / Chief cells)
- b. _____ is not a salivary gland (Submandibular gland / Lacrymal gland)
- c. Deficiency of _____ causes tetany. (Calcium / Magnesium).
- d. In blood , oxygen is carried by _____. (RBCs / WBCs)
- e. Bradycardia is _____ in heart rate. (Increase / Decrease)



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QUESTIONS (PAPER-II)

Time: 3 Hours

Full Marks : 100

Answer all questions

(USE SEPARATE ANSWER BOOK FOR SECTION-A, B & C)

SECTION-A (Community Medicine & Statistics - 40 marks)

1. Write Short Notes on (Any five)- (5 x 5 = 25 marks)

- a. Diseases transmitted by Rodents
- b. Water purification
- c. Mosquito borne diseases
- d. Food Fortification
- e. Treatment of Biomedical Waste
- f. Health hazards of Air pollution

2. Fill in the blanks (2 x 5 = 10 marks)

- a. _____ & _____ are diseases transmitted by Aedes mosquitoes.
- b. slabbies & scaly are the diseases transmitted by ticks.
- c. Vitamins D & K have anti oxidant properties.
- d. _____ & _____ are water soluble vitamins.
- e. Occupational cancer is common in cervix & breast organs of the body.

3. Write briefly on i) Line diagram ii) Histogram iii) Pie diagram (1 + 2 + 2 = 5)

SECTION- B (COMPUTER -20 marks)

1. Write short notes on (Any two) (5 x 2 = 10)

- a. Computer networking
- b. Computer memory
- c. Use of computer in pathology laboratory

(2 x 5 = 10 marks)

2. Fill in the blanks

- Full form of COBOL is _____ (Common Basic Operating Language / Common Business Oriented Language)
- _____ key is used for opening help. (F1 / F2)
- The fourth generation computers used _____ electronic component. (Transistors / Microprocessors)
- _____ is not a search engine. (Yahoo / Safari).
- _____ is the shortcut key to open a ' New Blank ' document in MS- Word (CTRL + M / CTRL + N)

SECTION-C (Pharmacology - 40 marks)

(6 x 5 = 30 marks)

1. Write short notes : (Any Five)

- ✓ Advantages & Disadvantages of Oral route of drug administration
- b. Adverse drug reactions of Penicillin
- c. Excretion of drugs
- d. Anti coagulants
- e. Anti viral drugs
- f. Generic medicines

2. Fill in the blanks -

(1 x 5 = 5 marks)

- Omeprazole is used to treat _____. (Peptic ulcer / Parkinsonism)
- Metoprolol is used to treat _____. (Hypertension / Bronchial asthma)
- Drug used to treat bronchial asthma is _____ (Salbutamol / Propranolol).
- Insulin is usually administered by _____ route. (Subcutaneous / Intradermal)
- HAART is used to treat _____ (AIDS / SARS)

3. Write true (T) or false (F) for the following statements.

(1 x 5 = 5 marks)

- ✓ a. Metronidazole is used in the treatment of aerobic infections .(True/ False)
 - ✓ b. Action of one drug facilitated or increased by another drug is known as antagonism. (True/ False)
 - ✗ c. Nitroglycerin is used in the treatment of hypertension .(True/ False)
 - ✓ d. Chloroquine is used for radical cure of malaria. (True/ False)
 - ✓ e. Rapid onset of action is seen following sublingual route of drug administration.(True/ False)
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QUESTIONS (PATHOLOGY, PAPER-III)

(LABORATORY WARES, INSTRUMENTS, SAFETY, CLINICAL HAEMATOLOGY)

Time- 3 Hours

FULL MARKS: 60

Answer all questions

(15 X 2 = 30)

1. Answer any TWO:

a. Describe the peripheral blood smear preparations under the headings of (i) Blood sample collection (ii) Anticoagulants used (iii) Smearing (iv) Leishman staining .
(3 + 3 + 3 + 6 = 15)

b. Name the different methods of Hemoglobin estimation. Write down the (i) Principles (ii) Advantages & (iii) Disadvantages of Sahali's method of Hemoglobin estimation.
(3 + 4 + 4 + 4 = 15)

c. Describe urine examinations under the headings of (i) Collection of urine samples (ii) Different chemical tests for detection of Glucose & Protein in urine.

(3 + 6 + 6 = 15)

2. Write short notes on any FIVE:

(4 X 5 = 20)

- Burettes & Pipettes
- Reticulocyte count
- Bleeding time & Clotting time
- Safety precautions for avoiding laboratory accidents
- Sickling test
- ESR estimation by Westergren's method

3. Fill in the blanks:

(1x 5 = 5)

- a. The acidic dye in Romanowsky stain is _____. (Eosin / Methylene blue)
- b. The name of the anticoagulant present in purple top vacutainer tube is _____ (Heparin / EDTA)
- c. The test used to detect bile salt in urine is _____ (Hay's test / Fouchet's test)
- d. The anticoagulant of choice for coagulation studies is _____ (Sodium Fluoride / 3.2% Tri sodium citrate).
- e. Hemophilia is _____ disease. (X-linked dominant / X-linked recessive)

4. Match the following:

(1X5=5)

- | | |
|------------------------|-----------------------------------|
| a. Bence Jones protein | 1. Acetoacetic acid b |
| b. Benzidine test | 2. PCV c |
| c. Wintrobe's tube | 3. CSF d |
| d. LP needle | 4. Occult blood in urine b |
| e. Ketone bodies | 5. Multiple myeloma a |



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QUESTIONS (MICROBIOLOGY; PAPER-IV)
(GENERAL & SYSTEMIC BACTERIOLOGY, CLINICAL MICROBIOLOGY)

Time- 3Hours

FULL MARKS: 60

ANSWER ALL QUESTIONS

1. Answer any Two

(15 X 2 = 30)

a. Classify the bacteria depending on their shapes; Write briefly about the (i) Bacterial cell wall (ii) Flagella (iii) Fimbriae & (iv) Bacterial spores.

(3 + 3 + 3 + 3 + 3 = 15)

b. Classify the different culture media used in Microbiology Laboratory & give examples of each. Write in details about the (i) Blood agar & (ii) Transport media.

(5 + 5 + 5 = 15)

c. Define Sterilisation & Disinfection. Enumerate the (i) Physical agents & (i) chemical agents of Sterilization.

(5 + 5 + 5 = 15)

2. Write short Notes on any five

(3 X 5 = 15)

- i) Lawn or Carpet culture
- ii) Hot air oven
- iii) Gram stain
- iv) Acid Fast stain
- v) Normal Bacterial flora of human body
- vi) Nosocomial (Hospital acquired) infections

3. Match the following :

(1 X 5 = 5)

- | | |
|-----------------------|---|
| i) Differential stain | a) Indian ink |
| ii) Simple stain | b) Stain to detect bacterial granules |
| iii) Negative stain | c) Stain to detect spirochetes & bacterial flagella |
| iv) Albert stain | d) Methylene blue |
| v) Silver stain | e) Acid fast stain |

4. Answer the following

(2 X 5 = 10)

- i) Examples of two spore forming bacteria .
- ii) Examples of two phases of the growth curve of the bacteria.
- iii) Examples of two types of microscopes used in microbiology laboratory.
- iv) Examples of two types of filters used to remove bacteria for water purification.
- v) Examples of two Gram negative bacteria.



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QUESTIONS (BIOCHEMISTRY, PAPER-V)

TIME: 3Hours

FULL MARKS: 60

Answer all questions

1. Write Short Notes : (ANY TEN)

(4 x 10 = 40)

- a. Biotin
- b. Buffers
- c. Functions of proteins in our body
- d. Indicators
- e. Difference between Starch & Glycogen
- f. Scurvy
- g. Essential Amino Acids
- h. Isoenzymes
- i. Functions of Calcium
- j. Iron deficiency anemia
- k. Coenzyme

2. FILL IN THE BLANKS

(1 X 10 = 10)

- a. _____ is known as good cholesterol. (LDL, HDL)
- b. Bile juice is _____ in nature. (Acidic , Alkaline)
- c. _____ is an aromatic amino acid. (Phenylalanine, Arginine)
- d. As per WHO recommendations, fasting plasma glucose level in a normal healthy adult should be _____. (70-100mg/dl, 80-120mg/dl)
- e. Vitamin _____ deficiency causes pellegra. (Riboflavin, Niacin)
- f. Vitamin D deficiency causes _____ in adults. (Rickets, Osteomalacia)
- g. _____ enzyme is elevated in acute pancreatitis (Enolase, Lipase)
- h. The end product of _____ catabolism is uric acid. (Purine, Pyrimidine)
- i. _____ pyrimidine base is present in both DNA & RNA. (Cytosine, Uracil)
- j. The protein part of an enzyme is called _____. (Apo enzyme, Co enzyme)

3. Write True (T) or False (F)

(2 x 5 = 10)

- a. Bile salts are important for digestion of lipids. ☐
 - b. Maltose contains two glucose residues. ☐
 - c. Lactose is a non reducing sugar. ☐
 - d. Glucagon decreases blood sugar levels. ☐
 - e. Vitamin D has antioxidant properties. ☐
- *****