J & K BOARD OF TECHNICAL EDUCATION

2MJ23 **ROLL No:** 1634-23M2-31229

Class: - 2nd Semester (NEP) **Branch: - MLT**

Subject: - CLINICAL MICROBIOLOGY II

Max. Marks: - 100 **Time Allotted: - 3-Hrs**

Note: There are THREE sections in the paper A, B, and C.

I. Answer all the 10 parts of the question in Section –A. Each part carries Two mark and all the 10 parts have objective type questions.

II. Answer any 4 questions out of 8 questions in Section –B. Each question carries 05 marks.

III. Answer any 4 questions out of 8 questions in Section –C. Each question carries 15 marks.

IV. Solve all the question of a section consecutively together.

Section A (10x2=20 marks)

Q1. Multiple choice questions.

I. Mycolic acid is present in cell wall of

a) Staphylococcus b) Mycobacterium c) Mycoplasma d) Proteus

II. Phenol red in acidic medium turns _____ in color

a) Green b) Red c) Blue d) Yellow

III. LJ medium is used to grow

a) Staphylococcus b) Mycobacterium c) S.typhi d) Pseudomonas

IV. Chocolate agar is prepared like blood agar except that the temperature is raised to about_____ degrees Celsius .

a) 55°c b) 95°c c) 80°c d) 155°c

V. Plates and tubes of culture media should be stored at_____ temperature.

a) 2-6 $^{\circ}$c b) 9-15°c c) 18-20°c d) 15-25°

VI. Which color indicates positive Methyl red test.

a) Green b) Red c) Blue d) Yellow

VII. Which media differentiates lactose fermenting bacteria from non-lactose fermenting bacteria

a) Blood agar b) Chocolate agar c) MacConkey agar d) Tellurite blood agar

VIII. In relation to nucleic acid technologies(NAT), what does P stand for in PCR method

a) Peroxide b) Photon c) Polymerase d) Periodic

IX. The characteristic IMViC reaction for E.coli is:

a) +,+,-,- b) -,-,+,+ c) -,+,+,- d) +,-,-,+

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X. Durham's tube is used to assess_____ .

a) Gas production b) pH c) Color development d) *Turbidity development*

SECTION B (Attempt any four) (4x5=20Marks)

Q.2 Write briefly about

a) CAMP test
b) Collection and transport of Neisseria meningitidis
c) IMViC
d) Hanging drop method
e) Pathogenesis
f) Nosocomial infections
g) Urinary tract infection
h) Gene Xpert (CBNAAT)

SECTION C (Attempt any four) (15x4=60 Marks)

Q.1 Describe the morphology, culture and bio chemical properties of staphylococcus aureus .

Q.2 Explain classification of Streptococci on the basis of haemolysis.

Q.3 Describe briefly the Lab. diagnosis of Enteric fever

Q.4 Explain briefly the cultural, Staining and biochemical properties of Esch.coli.

Q.5 Explain the culture and staining properties of Mycobacterium tuberculosis.

Q.6 Briefly describe

a) Catalase Test b) Coagulase Test

Q.7 Explain briefly

a) Antibiotic sensitivity Test b) Sources of Infection

Q.8 Write short notes on

a) PCR b) BacTec c) Infection

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ROLL No:_____

Class: - 2nd Semester (NEP)
Subject: - CLINICAL PATHOLOGY
Max. Marks: - 100

Branch: - MLT
Time Allotted: - 3-Hrs

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Note: There are THREE sections in the paper A, B, and C.

I. Answer all the 10 parts of the question in Section –A. Each part carries Two mark and all the 10 parts have objective type questions.
II. Answer any 4 questions out of 8 questions in Section –B. Each question carries 05 marks.
III. Answer any 4 questions out of 8 questions in Section –C. Each question carries 15 marks.
IV. Solve all the question of a section consecutively together.

Section A (10x2=20 marks)

Q1. Multiple choice questions.

I. To obtain proper test results, specimen must be properly
a) Collected b) Processed c) Recorded d) All of these

II. What is the optimum temperature to store blood right after collecting it
a) 30° c b) 37° c c) 22° c d) 32° c

III. Which of the following specimen usually eliminates condemnation of the urine with entities from the external genitalia and the distal urethra
a) First morning specimen b) Mid stream clean catch collection c) Random specimen d) 24 hrs timed collection

IV. The urine volume more than 2400 ml is termed as
a) Anuria b) polyuria c) Nocturia d) Oliguria

V. The normal specific gravity in random urine is
a) 1.001-1.035 b) 1.205-1.305 c) 1.010-1.015 d) 1.005-1.008

VI. Stool examination is routinely done for the diagnosis of
a) Kidney disorder b) Parasitic infection c) Both a and b d) Hepatic disorder

VII. In which condition the volume of urine is increased
a) Diabetic insipidus b) polycythemia c) Anemia d) Leukemia

VIII. CSF is used for the diagnosis of
a) Liver b) Kidney c) Central Nervous system d) All of theses

IX. What is the normal liquefication time of seminal fluid
a) 10-30 minutes b) 40- 50 minutes c) 50- 60 minutes d) 1-5 minutes

X. Semen should be examined within _____ hours of collection
a) 2 hours b) 4 hours c) 5hours d) 12 hours

SECTION B (Attempt any four) (4x5=20Marks)

Write briefly about
Q1. Bile salts
Q2. Cleaning of new glassware
Q3.Collection and preservation of urine

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Q4. Volume, colour and functions of synovial fluid
Q5. Preparation of microscopic slide for microscopic examination of Ova/Cyst
Q6. What are the normal features of spermatozoa ?
Q7.What is Aspermia ,Azoospermia and Oligozoospermia ?
Q8.Pleural fluid

SECTION C (Attempt any four) (15x4=60 Marks)

Q.1 Describe the normal composition of urine.

Q.2 Write the principle and procedure of occult blood in stool with its clinical significance.
Q.3 Write the Clinical importance, procedure and reference range of protein estimation in CSF.

Q.4 Explain briefly about Specimen collection, processing and staining of sputum for AFB.

Q.5 Explain briefly:

a) Ketone bodies b) Bile pigments and urobilinogen

Q.6 Write short notes on:

a) Physical characteristics of stool b) Methods of cleaning and storage of glassware

Q.7 Briefly describe the collection and preservation of Urine and stool.

Q.8 Write short notes on

a) *Microscopic* examination of semen b) HCG test c) Cleaning agents used for glassware

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ROLL No:_____

Class: - 2nd Semester (NEP) Branch: - MLT

Subject: - CLINICAL HEMATOLOGY II

Max. Marks: - 100 Time Allotted: - 3-Hrs

Note: There are THREE sections in the paper A, B, and C.

I. **Answer all the 10 parts of the question in Section –A. Each part carries Two mark and all the 10 parts have objective type questions.**

II. **Answer any 4 questions out of 8 questions in Section –B. Each question carries 05 marks.**

III. **Answer any 4 questions out of 8 questions in Section –C. Each question carries 15 marks.**

IV. **Solve all the question of a section consecutively together.**

Section A (10x2=20 marks)

Q1. Multiple choice questions.

I. The colored pigment present in hemoglobin is known as
a) Globin b) Bilirubin c) Heme d) Biliverdin

II. In sahli's method of Hb estimation ,blood is converted into which solotion
a) Alkali hematin b) Oxyhemoglobin c) Acid hematin d) None

III. Abnormal variation in the size of RBC is known as
a) Microcytosis b) Macrocytosis c) Anisocytosis d) Piokilocytosis

IV. A fall in leucocyte count below 4000/cumm of blood is called
a) Leucocytosis b) Thrombocytosis c) Leucopenia d) Leukemia

V. Which stain is routinely used for differential leucocyte count
a) Albert stain b) Leishman stain c) Gram stain d) Acridine orange stain

VI. The thickness of blood film depends upon
a) Spreading technique b) Size of blood drop c) Angle between spreader and slide d) All options

VII. Where are WBC's counted in Neubauer counting chamber
a) The middle square b) The four corner squares c) The three top squares d)The three bottom squares

VIII. In improved Neubauer counting chamber total number of small squares in the central square are
a) 500 b) 600 c) 400 d) 200

IX. Which stain contains both acidic and basic dye
a) Romanowsky stain b) Vital stain c) Supra vital stain d) Albert stain

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X. Most commonly used anticoagulant used for ESR is
a) Sodium citrate b) EDTA c) Heparin d) sodium fluoride

SECTION B (Attempt any four) (4x5=20Marks)

Q.2 Write briefly about

a) Functions of Hemoglobin
b) Calculation formula and reference range of WBC and RBC count
c) Preparation of thin blood flim
d) Features of ideal thin blood flim
e) Draw RBC and WBC pipettes
f) Draw various types of WBC's
g) Packed cell volume
h) Improved Neubauer chamber

SECTION C (Attempt any four) (15x4=60 Marks)

Q.1 Explain the errors involved in Haemocytometry and how to minimize them.

Q.2 Write the procedure of differential leucocytes count (DLC). Draw the morphology of each cell with normal percentage.

Q.3 Name the various methods of Haemoglobin estimation, write the principal & procedure of Heamoglobin estimation by sahli's acid haemtin method.

Q.4 Explain the estimation of ESR by Westergren Method.

Q.5 Explain briefly

a) Automation in hematology b) Packed cell volume

Q.6 Name the various counting chambers draw the diagram of neubauer counting Chamber.

Q.7 Explain blood cell morphology in health and diseased condition .

Q.8 write short notes on

a) Formation of Haemoglobin b) Staining of Thin blood film

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2MJ23 **ROLL No:** 1634-23M2-31222

Class: - 2nd Semester (NEP) **Branch: - MLT**

Subject: - ENVIRONMENTAL SCIENCE

Max. Marks: - 100 **Time Allotted: - 3-Hrs**

Note: There are THREE sections in the paper A, B, and C.

I. **Answer all the 10 parts of the question in Section –A. Each part carries Two mark and all the 10 parts have objective type questions.**

II. **Answer any 4 questions out of 8 questions in Section –B. Each question carries 05 marks.**

III. **Answer any 4 questions out of 8 questions in Section –C. Each question carries 15 marks.**

IV. **Solve all the question of a section consecutively together.**

Section A (10x2=20 marks)

Q1. Multiple Choice Questions

1) E- waste is generated by
a. Ecology b . Industry c. Electronic items d. Sewage

2)Central pollution control board was established in the year
a. 1947 b. 1964. c. 1974 d. 1981

3) Solid waste management can be defined as the method of
a . Onsite handling, storage and processing.
b . Collection, transfer and transport of solid waste
c. Resource recovery and processing.
d. All of these.

4) Which one of the following causes ozone layer depletion?
a. Methyl chloroform b . Oxygen c. Mercury d. Sodium Silicate.

5) Organisms depend on
a. Living factors b. Non-living factors c. Both a and b d. None of these.

6) All are primary pollutants except
a. Sulphur dioxide b. Hydrogen sulphide c. Ammonia d. Peroxy acetyl nitrate

7) Most harmful pollutant is
a. SO2 b. NO2 c. SO3 d. CO2.

8) Increased levels of air pollution result in
a. Global warming b. Soil erosion c. Respiratory problems d. None of these.

9)what is particulate matter causing air pollution called?
a. Soot b. Foam c. Smog d. None of these

10) The problems that cause global warming include
a. Overpopulation b . Deforestation c.ozone depletion d. All of these

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Section B (Attempt any four)(4×5=20Marks)

Q1) What is ozone layer depletion ,Explain .
Q2) What is carbon cycle? Explain.
Q3) What is greenhouse effect?
Q4) Write short note on acid rain.
Q5) Differentiate between BOD and COD
Q6) Write short note on 3Rs.
Q7) What are the characteristics of environmental management?
Q8) What are the sources of waste?

Section C(Attempt any four)(15×4=60 Marks)

Q1) What are the sources and characteristics of municipal solid waste?.
Q2) Explain the structure and role of central and state pollution control board.
Q3) Explain carbon and nitrogen cycle with the help of well labelled diagram.
Q4) Write short note on following:
a. Sedimentation b. Froth floatation c. Reverse osmosis.
Q5) Explain the structure of ecosystem.
Q6) Define soil pollution. Explain causes, effect and preventive measures of soil pollution.
Q7) Explain the sources and characteristics of E-Waste and biomedical waste
Q8) Define global warming. Explain its causes and effects.

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ROLL No:_____

2MJ23

Class: - 2nd Semester (NEP) **Branch: - MLT**

Subject: - ANATOMY & PHYSIOLOGY II **Time Allotted: - 3-Hrs**

Max. Marks: - 100

Note: There are THREE sections in the paper A, B, and C.

I. **Answer all the 10 parts of the question in Section –A. Each part carries Two mark and all the 10 parts have objective type questions.**

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IV. **Solve all the question of a section consecutively together.**

Section A (10x2=20 marks)

Q1. Multiple choice questions.

I. Which is the main artery in the body
a) Innominate artery b) Arterioles c) Aorta d) None of these

II. Blood contains a fluid called
a) Plasma b) Serum c) CSF d) None of these

III. Heart is surrounded by an outer covering called
a) Myocardium b) Endocardium c) Pericardium d) None of these

IV. The impulse for cardiac contraction starts at the
a) Atrio-ventricular node (AV node) b) sinoatrial node (SA node) c) Artery d) None of these

V. Which organ in males produce spermatozoa
a) Seminal vesicles b) Testis c) Seminal duct d) None of these

VI. Thyroid gland has how many lobes
a) 4 b) 6 c) 2 d) 3

VII. Cornea is part of which sensory organ
a) Ear b) Nose c) Eye d) Tongue

VIII. Luteinizing hormone stimulates
a) Ovary in female b) Testis in Male c) Both a and b d) None of these

IX. Which is the largest part of the brain
a) Cerebellum b) Medulla oblongata c) Mid Brain d) cerebrum

X. How many cranial nerves are present in pheripheral nervous system
a) 10 b) 20 c) 08 d) 12

SECTION B (Attempt any four) (4x5=20Marks)

Q.2 Write briefly about

a) Functions of cerebrum
b) Retina
c) Functions of thyroid hormone
d) Functions of blood
e) Fertilization
f) Cardiac Cycle
g) Muscle fatigue
h) Draw a labelled diagram of spinal cord (cross section)

SECTION C (Attempt any four) (15x4=60 Marks)

Q.1 Explain the function of eye and nose and draw their diagram.

Q.2 Explain briefly:

a) Cerebrum b)Thalamus c)Cerebellum

Q.3 Explain the events in cardiac cycle ?

Q.4 Write short notes on

a) Functions of parathyroid hormone b) Thymus c) Composition of blood

Q.5 Explain the female reproduction system with the help of diagram?

Q.6 Briefly describe:

a) Skeletal muscle b) Smooth muscle c) Cardiac muscle

Q.7 Define Briefly:

a) Function of adrenal gland b) Hormone secreted by thyroid and its function

Q.8 Explain briefly:

a) Cranial nerves b) Lymph

a) Functions of cerebrum
b) Retina
c) Functions of thyroid hormone
d) Functions of blood
e) Fertilization
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