DE-2910
First Year B. Sc. (Medical Technology) (Sem. I)
Examination
March/April - 2016
MT - 01 : Fundamentals of Medical Technology

Time : 2 Hours] [Total Marks : 50

सूचना/Instructions :

(1) Fillup strictly the details of signs on your answer book.
Name of the Examination :
F. Y. B. Sc. (Medical Technology) (Sem. I)
Name of the Subject :
MT - 01 : Fundamentals of Medical Technology
Subject Code No. : 2 9 1 0
Section No. (1, 2, ....) Nil

Seat No. : 

(2) प्रश्नमाला कुल 50 प्रश्न हैं, भाग ज कर्तव्यात हैं. हरेक प्रश्न (1) अंक गुणा हैं. There are 50 questions and each question carries one (1) mark and all are compulsory.

(3) हरेक प्रश्नो कायमधुर्यक्ष अध्यास करी साथे विकल्प पसंद करो. Read the question carefully before selecting the correct option.

O.M.R. Sheet लवण अपेक्षित अन्यान्य सूचनाओ आपेक्षित O.M.R. Sheet-नी पात्र अध्ययन करो.

Important instructions to fillup O.M.R. Sheet is given on back side of the provided O.M.R. Sheet.
1. Which type of flask is used for carrying out titrations?
   (A) Conical flask
   (B) Round shape flat bottom flask
   (C) Flat bottom flask
   (D) Round shape round bottom flask

2. Among the following which is the characteristic of a borosilicate glass?
   (A) Thermal Shock resistant
   (B) All of these
   (C) Heat resistant
   (D) Chemical resistant

3. Mean, median and mode determines:
   (A) Specificity
   (B) Central Tendency
   (C) Accuracy
   (D) Sensitivity

4. This is a TC pipette which holds 20 μl of blood:
   (A) Pasteur Pipette
   (B) Mohr pipette
   (C) Sahl's pipette
   (D) Serological pipette

5. Which sample is recommended to diagnose Lung diseases?
   (A) Pericardial fluid
   (B) None of these
   (C) Peritoneal fluid
   (D) Pleural fluid

6. How much of 75% Na₂CO₃ is required if we want to prepare 500 ml of 15%
   Na₂CO₃ solution?
   (A) 100 ml 75% Na₂CO₃ + 400 ml Distilled water.
   (B) 125 ml 60% Na₂CO₃ + 375 ml Distilled water.
   (C) 100 ml 75% Na₂CO₃ + 300 ml Distilled water.
   (D) 125 ml 15% Na₂CO₃ + 375 ml Distilled water.

7. Which fluid is present in the knee and elbow joints?
   (A) Synovial Fluid
   (B) Peritoneal Fluid
   (C) CSF
   (D) Pleural Fluid

8. 5 gm of solute in 100 ml solution will be:
   (A) 100%
   (B) 0.5%
   (C) 50%
   (D) 5%

9. The microscopic slides and cover slips used for fecal examination should be
   cleaned with:
   (A) Alcohol
   (B) Detergent
   (C) 5% phenol
   (D) Formalin

10. Which preservative is added in urine to avoid Microbial growth?
    (A) Choroform
    (B) All of these
    (C) Toluene
    (D) Thymol
is the measure of central tendency of a database.

(A) Mode       (B) None of these
(C) Mean       (D) Median

Calculate the CV (%) of a dataset whose mean is 100 and SD is ± 3.78.

(A) 2.9%       (B) 3.78%
(C) 3.99%      (D) 2.53%

Which method is used to calibrate To-contain pipettes?

(A) Analytical Method
(B) None of these
(C) Photometric Method
(D) Gravimetric Method

Which test is used to determine statistical significant difference between means of two groups of data?

(A) Chi-square test
(B) All of these
(C) F-test
(D) t-test

How can we prepare 1 liter 0.1 M solution of NaOH from 0.5 M solution of NaOH?

(A) Add 200 ml 0.5M NaOH and 800 ml Distilled water.
(B) Add 800 ml 0.5M NaOH and 200 ml Distilled water.
(C) Add 500 ml 0.5M NaOH and 500 ml Distilled water.
(D) Add equal amount of NaOH and Distilled water.

Coefficient of variation is also known as:

(A) Mean
(B) Mode
(C) Standard deviation
(D) Relative Standard Deviation

Which specimen is used for diagnosis of meningitis?

(A) Stool
(B) Synovial fluid
(C) CSF
(D) Blood

Which rules helps the laboratory staff to say weather a Quality Control programme is under control or not?

(A) Northgard's rule
(B) Westgard's rule
(C) Eastgard's rule
(D) Southgard's rule

Which transport medias are used for throat swab?

(A) Amies media
(B) All of these
(C) Stuart media
(D) Carry Blair Medium

Which ions helps to convert prothrombin into thrombin?

(A) OH⁻       (B) Fe⁺
(C) Ca²⁺       (D) Mg²⁺
21 You have 1.10 N HCl solution. How much water would you mix in order to obtain 1 L of 1 N HCl solution?
(A) 90.91 ml
(B) 200 ml
(C) 150 ml
(D) 909.09 ml

22 Specimen collection, handling, selection of right procedure are parts of:
(A) Analytical factors
(B) All of these
(C) Post-analytical factors
(D) Pre-analytical factors

23 What is the pH range of the indicator phenolphthalein?
(A) 6.0 – 7.5
(B) 8.3 – 10.0
(C) 7.5 – 8.0
(D) 10 – 11

24 Which blood component release thromboplastin which helps in coagulation of blood during damage of blood vessel?
(A) Platelets
(B) Fibrinogen
(C) WBC
(D) RBC

25 Which bacteria is most commonly found in CSF?
(A) *Pseudomonas aeruginosa*
(B) *Staphylococcus aureus*
(C) *Escherichia coli*
(D) *Neisseria meningitides*
26 Which preservative is added in urine to test pregnancy?
   (A) Formalin
   (B) None of these
   (C) Toluene
   (D) Thymol

27 Those solution which contains maximum amount of solute dissolved at a given temperature and pressure are called?
   (A) Standard solution
   (B) Normal solution
   (C) Saturated solution
   (D) Molar solution

28 Find the mode from given data:
   28, 24, 14, 44, 14, 16, 32, 14, 43, 60.
   (A) 14
   (B) 44
   (C) 20
   (D) 32

29 If the given sets of data mean, median and mode are equal, which type of distribution is this?
   (A) Symmetrical
   (B) None of these
   (C) Bimodal
   (D) Asymmetrical

30 Which method is used to collect the pericardial fluid?
   (A) Thoracentesis
   (B) Lumbar puncture
   (C) Pericardiocentesis
   (D) Paracentesis
31. Among these which is not an anticoagulant?
   (A) Sodium Citrate
   (B) Phosphate buffer
   (C) Double Oxalate
   (D) EDTA

32. Determine the cusum values from the given data set: 88, 85, 90, 92, 95.
   (A) -3, +2, -3, 0, 0
   (B) -3, -2, +3, 0, 4
   (C) +2, +5, 0, -2, -5
   (D) +2, +7, +7, +5, 0

33. These are graduated pipettes marked up to the tip:
   (A) Serological pipettes
   (B) Pasteur pipette
   (C) Mohr pipette
   (D) Sahli's pipette

34. SD/mean \times 100 is the formula used to calculate:
   (A) Standard Errors
   (B) Analytical Errors
   (C) Coefficient of variation
   (D) Median

35. Which method is used for CSF collection?
   (A) arterial puncture
   (B) None of these
   (C) venous puncture
   (D) Lumbar puncture

36. Systemic errors are due to:
   (A) Both wrong procedures and right procedures
   (B) None of these
   (C) wrong procedures
   (D) right procedures

37. _______ is the value in a group which occurs most frequently.
   (A) Range
   (B) Mode
   (C) Median
   (D) Mean
38 Calculate the median from the given sets of data:
36, 43, 38, 55, 68, 75.
(A) 63
(B) 42
(C) 50
(D) 49

39 _____ is used to remove immersion oil from the slides.
(A) Xylene
(B) Water
(C) Grease
(D) Glacial acetic acid

40 Which preservative is added to preserve Stool cultures for two weeks?
(A) Toluene
(B) Alcohol
(C) Formaldehyde
(D) Buffered Glycerol saline

41 Equivalent weight of an acid or base dissolved and made to a liter of a solution gives:
(A) Molar solution
(B) Normal solution
(C) Standard solution
(D) Saturated solution

42 A combination of Precision and accuracy is:
(A) Specificity
(B) Sensitivity
(C) Dependability
(D) Statistics

43 Which specimen is used for diagnosis of intestinal parasitic infections?
(A) Stool
(B) Synovial fluid
(C) Pleural fluid
(D) CSF

44 Fluid portion of anticoagulated blood is termed as:
(A) Platelets
(B) RBC and WBC
(C) Serum
(D) Plasma
45 Which specimen is recommended for pathogens of lower respiratory tract?
(A) Cough
(B) None
(C) Sputum
(D) Saliva

46 It is a long cylindrical piece of glassware with calibration marking on it in an ascending order (zero at bottom):
(A) Digestion tubes
(B) Centrifuge tubes
(C) Cuvettes
(D) Graduated Cylinder

47 It refers to reproducibility of results when performed repeatedly from the same sample:
(A) Dependability
(B) Precision
(C) Simplicity
(D) Accuracy

48 Which transport medium is used to preserve throat swabs?
(A) Cary Blair medium
(B) Formalin
(C) Loeffler's medium
(D) Toluene

49 A material or preparation used to monitor the stability of test system within limits is called:
(A) Control
(B) None
(C) Standard solution
(D) Normal solution

50 Calculate the mean of (conc. of glucose in mg/dl) the given data:
(90, 106, 115, 100, 98, 102, 120, 117)
(A) 120
(B) 106
(C) 96
(D) 130