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) Fill up strictly the details of sign 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. 2910
Section No. (1, 2, ...), Nil

(2) There are 50 questions and each question carries one (1) mark and all are compulsory.

(3) Read the question carefully before selecting the correct option.

O.M.R. Sheet का अंगेलौं अंगेलौं सूचना का आवेद
O.M.R. Sheet का पत्ता अंगेलौं का

Important instructions to fill up O.M.R. Sheet
is given on back side of the provided O.M.R. Sheet.
1. Among these which is not an anticoagulant?
   (A) Double Oxalate
   (B) EDTA
   (C) Sodium Citrate
   (D) Phosphate buffer

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

20 Calculate the mean of (conc. of glucose in mg / dl) the given data:
   (90, 106, 115, 100, 98, 102, 120, 117)
   (A) 96
   (B) 130
   (C) 120
   (D) 106
21 Which type of flask is used for carrying out titrations?
   (A) Flat bottom flask
   (B) Round shape round bottom flask
   (C) Conical flask
   (D) Round shape flat bottom flask

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

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

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

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

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

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

28 5 gm of solute in 100 ml solution will be:
   (A) 50%
   (B) 5%
   (C) 100%
   (D) 0.5%

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

30 Which preservative is added in urine to avoid Microbial growth?
   (A) Toluene
   (B) Thymol
   (C) Choroform
   (D) All of these
31 is the measure of central tendency of a database.
(A) Mean (B) Median  
(B) Mode (D) None of these

32 Calculate the CV (%) of a dataset whose mean is 100 and SD is ± 3.78.
(A) 3.99%  (B) 2.53%  
(C) 2.9%  (D) 3.78%

33 Which method is used to calibrate To-contain pipettes ?
(A) Photometric Method  (B) Gravimetric Method  
(C) Analytical Method (D) None of these

34 Which test is used to determine statistical significant difference between means of two groups of data ?
(A) F-test  (B) t-test  
(C) Chi-square test (D) All of these

35 How can we prepare 1 liter 0.1 M solution of NaOH from 0.5 M solution of NaOH ?
(A) Add 500 ml 0.5M NaOH and 500 ml Distilled water.  
(B) Add equal amount of NaOH and Distilled water.  
(C) Add 200 ml 0.5M NaOH and 800 ml Distilled water.  
(D) Add 800 ml 0.5M NaOH and 200 ml Distilled water.

36 Coefficient of variation is also known as :
(A) Standard deviation  (B) Relative Standard Deviation  
(C) Mean  (D) Mode

37 Which specimen is used for diagnosis of meningitis ?
(A) CSF  (B) Blood  
(C) Stool (D) Synovial fluid

38 Which rules helps the laboratory staff to say weather a Quality Control programme is under control or not ?
(A) Eastgard's rule  (B) Southgard's rule  
(C) Northgard's rule (D) Westgard's rule

39 Which transport medias are used for throat swab ?
(A) Stuart media  (B) Carry Blair Medium  
(C) Amies media (D) All of these

40 Which ions helps to convert prothrombin into thrombin ?
(A) Ca^{++}  (B) Mg^{++}  
(C) OH^-  (D) Fe^+
41. 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) 150 ml
   (B) 909.09 ml
   (C) 90.91 ml
   (D) 200 ml

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

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

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

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

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

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

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

50 Which method is used to collect the pericardial fluid?
(A) Pericardiocentesis
(B) Paracentesis
(C) Thoracentesis
(D) Lumbar puncture