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

-su-var//Instructions :

(1) Fill up strictly the details of signs on your answer book.

(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 બજા અંગેની અંગેની સૂવભાવો આપેલ
O.M.R. Sheet-ની પાણી કરીએ છે.

Important instructions to fillup O.M.R. Sheet is given on back side of the provided O.M.R. Sheet.

DE-2910_B ] 1 [ Contd...
1. is the measure of central tendency of a database.
   (A) None of these  (B) Mean
   (C) Median        (D) Mode

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

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

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

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

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

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

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

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

10. Which ions helps to convert prothrombin into thrombin?
    (A) Fe⁺⁺⁺         (B) Ca⁺⁺⁺⁺
    (C) Mg⁺⁺⁺         (D) OH⁻
11. 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) 200 ml
   (B) 150 ml
   (C) 909.09 ml
   (D) 90.91 ml

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

48 5 gm of solute in 100 ml solution will be:
   (A) 0.5%
   (B) 50%
   (C) 5%
   (D) 100%

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

50 Which preservative is added in urine to avoid Microbial growth?
   (A) All of these
   (B) Toluene
   (C) Thymol
   (D) Choroform