

**D****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

સૂચના/Instructions :

(1)

નીચે દર્શાવેલ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી. Fillup strictly the details of signs on your answer book.	Seat No. :
Name of the Examination :	<input type="text"/>
<input type="text" value="F. Y. B. Sc. (Medical Technology) (Sem. I)"/>	<input type="text"/>
Name of the Subject :	<input type="text"/>
<input type="text" value="MT - 01 : Fundamentals of Medical Technology"/>	<input type="text"/>
Subject Code No. : <input type="text" value="2"/> <input type="text" value="9"/> <input type="text" value="1"/> <input type="text" value="0"/>	<input type="text"/>
Section No. (1, 2,.....) : <input type="text" value="Nil"/>	<input type="text"/>
	Student's Signature

- (2) પ્રશ્નપત્રમાં કુલ ૫૦ પ્રશ્નો છે, બધા જ ફરજિયાત છે. દરેક પ્રશ્નનો (૧) એક ગુણ છે.
There are 50 questions and each question carries one (1) mark and all are compulsory.
- (3) દરેક પ્રશ્નનો કાળજીપૂર્વક અભ્યાસ કરી સાચો વિકલ્પ પસંદ કરો.
Read the question carefully before selecting the correct option.

***O.M.R. Sheet ભરવા અંગેની અગત્યની સૂચનાઓ આપેલ
O.M.R. Sheet-ની પાછળ છાપેલ છે.
Important instructions to fillup O.M.R. Sheet
is given on back side of the provided O.M.R. Sheet.***

- 1 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) 909.09 ml
 - (B) 90.91 ml
 - (C) 200 ml
 - (D) 150 ml
- 2 Specimen collection, handling, selection of right procedure are parts of :
- (A) Pre-analytical factors
 - (B) Analytical factors
 - (C) All of these
 - (D) Post-analytical factors
- 3 What is the pH range of the indicator phenolphthalein ?
- (A) 10 – 11
 - (B) 6.0 – 7.5
 - (C) 8.3 – 10.0
 - (D) 7.5 – 8.0
- 4 Which blood component release thromboplastin which helps in coagulation of blood during damage of blood vessel ?
- (A) RBC
 - (B) Platelets
 - (C) Fibrinogen
 - (D) WBC
- 5 Which bacteria is most commonly found in CSF ?
- (A) *Neisseria meningitides*
 - (B) *Pseudomonas aeruginosa*
 - (C) *Staphylococcus aureus*
 - (D) *Escherichia coli*

- 6 Which preservative is added in urine to test pregnancy ?
- (A) Thymol
 - (B) Formalin
 - (C) None of these
 - (D) Toluene
- 7 Those solution which contains maximum amount of solute dissolved at a given temperature and pressure are called?
- (A) Molar solution
 - (B) Standard solution
 - (C) Normal solution
 - (D) Saturated solution
- 8 Find the mode from given data :
- 28, 24, 14, 44, 14, 16, 32, 14, 43, 60.
- (A) 32
 - (B) 14
 - (C) 44
 - (D) 20
- 9 If the given sets of data mean, median and mode are equal, which type of distribution is this ?
- (A) Asymmetrical
 - (B) Symmetrical
 - (C) None of these
 - (D) Bimodal
- 10 Which method is used to collect the pericardial fluid ?
- (A) Paracentesis
 - (B) Thoracentesis
 - (C) Lumbar puncture
 - (D) Pericardiocentesis

- 11 Among these which is not an anticoagulant ?
(A) EDTA
(B) Sodium Citrate
(C) Phosphate buffer
(D) Double Oxalate
- 12 Determine the cusum values from the given data set :
88, 85, 90, 92, 95.
(A) +2, +7, +7, +5, 0
(B) -3, +2, -3, 0, 0
(C) -3, -2, +3, 0, 4
(D) +2, +5, 0, -2, -5
- 13 These are graduated pipettes marked up to the tip :
(A) Sahli's pipette
(B) Serological pipettes
(C) Pasteur pipette
(D) Mohr pipette
- 14 $SD/\text{mean} \times 100$ is the formula used to calculate :
(A) Median
(B) Standard Errors
(C) Analytical Errors
(D) Coefficient of variation
- 15 Which method is used for CSF collection ?
(A) Lumbar puncture
(B) arterial puncture
(C) None of these
(D) venous puncture
- 16 Systemic errors are due to :
(A) right procedures
(B) Both wrong procedures and right procedures
(C) None of these
(D) wrong procedures
- 17 _____ is the value in a group which occurs most frequently.
(A) Mean
(B) Range
(C) Mode
(D) Median

- 18 Calculate the median from the given sets of data :
36, 43, 38, 55, 68, 75.
(A) 49
(B) 63
(C) 42
(D) 50
- 19 _____ is used to remove immersion oil from the slides.
(A) Glacial acetic acid
(B) Xylene
(C) Water
(D) Grease
- 20 Which preservative is added to preserve Stool cultures for two weeks ?
(A) Buffered Glycerol saline
(B) Toluene
(C) Alcohol
(D) Formaldehyde
- 21 Equivalent weight of an acid or base dissolved and made to a liter of a solution gives :
(A) Saturated solution
(B) Molar solution
(C) Normal solution
(D) Standard solution
- 22 A combination of Precision and accuracy is :
(A) Statistics
(B) Specificity
(C) Sensitivity
(D) Dependability
- 23 Which specimen is used for diagnosis of intestinal parasitic infections ?
(A) CSF
(B) Stool
(C) Synovial fluid
(D) Pleural fluid
- 24 Fluid portion of anticoagulated blood is termed as :
(A) Plasma
(B) Platelets
(C) RBC and WBC
(D) Serum

- 25 Which specimen is recommended for pathogens of lower respiratory tract ?
(A) Saliva
(B) Cough
(C) None
(D) Sputum
- 26 It is a long cylindrical piece of glassware with calibration marking on it in an ascending order (zero at bottom) :
(A) Graduated Cylinder
(B) Digestion tubes
(C) Centrifuge tubes
(D) Cuvettes
- 27 It refers to reproducibility of results when performed repeatedly from the same sample :
(A) Accuracy
(B) Dependability
(C) Precision
(D) Simplicity
- 28 Which transport medium is used to preserve throat swabs ?
(A) Toluene
(B) Cary Blair medium
(C) Formalin
(D) Loeffler's medium
- 29 A material or preparation used to monitor the stability of test system within limits is called :
(A) Normal solution
(B) Control
(C) None
(D) Standard solution
- 30 Calculate the mean of (conc. of glucose in mg / dl) the given data :
(90, 106, 115, 100, 98, 102, 120, 117)
(A) 130
(B) 120
(C) 106
(D) 96

- 31 Which type of flask is used for carrying out titrations ?
 (A) Round shape round bottom flask
 (B) Conical flask
 (C) Round shape flat bottom flask
 (D) Flat bottom flask
- 32 Among the following which is the characteristic of a borosilicate glass ?
 (A) Chemical resistant
 (B) Thermal Shock resistant
 (C) All of these
 (D) Heat resistant
- 33 Mean, median and mode determines :
 (A) Sensitivity
 (B) Specificity
 (C) Central Tendency
 (D) Accuracy
- 34 This is a TC pipette which holds 20 μ l of blood :
 (A) Serological pipette
 (B) Pasteur Pipette
 (C) Mohr pipette
 (D) Sahli's pipette
- 35 Which sample is recommended to diagnose Lung diseases ?
 (A) Pleural fluid
 (B) Pericardial fluid
 (C) None of these
 (D) Peritoneal fluid
- 36 How much of 75% Na_2CO_3 is required if we want to prepare 500 ml of 15% Na_2CO_3 solution ?
 (A) 125 ml 15% Na_2CO_3 + 375 ml Distilled water.
 (B) 100 ml 75% Na_2CO_3 + 400 ml Distilled water.
 (C) 125 ml 60% Na_2CO_3 + 375 ml Distilled water.
 (D) 100 ml 75% Na_2CO_3 + 300 ml Distilled water.
- 37 Which fluid is present in the knee and elbow joints ?
 (A) Pleural Fluid
 (B) Synovial Fluid
 (C) Peritoneal Fluid
 (D) CSF
- 38 5 gm of solute in 100 ml solution will be :
 (A) 5% (B) 100%
 (C) 0.5% (D) 50%
- 39 The microscopic slides and cover slips used for fecal examination should be cleaned with :
 (A) Formalin (B) Alcohol
 (C) Detergent (D) 5% phenol
- 40 Which preservative is added in urine to avoid Microbial growth ?
 (A) Thymol (B) Chloroform
 (C) All of these (D) Toluene

- 41 _____ is the measure of central tendency of a database.
 (A) Median (B) Mode
 (C) None of these (D) Mean
- 42 Calculate the CV (%) of a dataset whose mean is 100 and SD is ± 3.78 .
 (A) 2.53% (B) 2.9%
 (C) 3.78% (D) 3.99%
- 43 Which method is used to calibrate To-contain pipettes ?
 (A) Gravimetric Method
 (B) Analytical Method
 (C) None of these
 (D) Photometric Method
- 44 Which test is used to determine statistical significant difference between means of two groups of data ?
 (A) t-test
 (B) Chi-square test
 (C) All of these
 (D) F-test
- 45 How can we prepare 1 liter 0.1 M solution of NaOH from 0.5 M solution of NaOH ?
 (A) Add equal amount of NaOH and Distilled water.
 (B) Add 200 ml 0.5M NaOH and 800 ml Distilled water.
 (C) Add 800 ml 0.5M NaOH and 200 ml Distilled water.
 (D) Add 500 ml 0.5M NaOH and 500 ml Distilled water.
- 46 Coefficient of variation is also known as :
 (A) Relative Standard Deviation
 (B) Mean
 (C) Mode
 (D) Standard deviation
- 47 Which specimen is used for diagnosis of meningitis ?
 (A) Blood
 (B) Stool
 (C) Synovial fluid
 (D) CSF
- 48 Which rules helps the laboratory staff to say weather a Quality Control programme is under control or not ?
 (A) Southgard's rule
 (B) Northgard's rule
 (C) Westgard's rule
 (D) Eastgard's rule
- 49 Which transport medias are used for throat swab ?
 (A) Carry Blair Medium
 (B) Amies media
 (C) All of these
 (D) Stuart media
- 50 Which ions helps to convert prothrombin into thrombin ?
 (A) Mg^{++} (B) OH^{-}
 (C) Fe^{+} (D) Ca^{++}