



भारतीय प्रौद्योगिकी संस्थान मुंबई
पवई, मुंबई - 400 076, भारत
Indian Institute of Technology Bombay
Powai, Mumbai - 400 076, India

(उच्चतर शिक्षा शिभाग, शिक्षा मंत्रालय, भारत सरकार के तहत एक स्वायत्त संगठन)
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Recruitment Unit
Administration Section
Phone : (+91-22) 2159 6171
(+91-22) 2159 6172
E-mail Id - jobs@iitb.ac.in
Website : www.iitb.ac.in

No. Admin/Rect/2025

Date: 12.03.2025

Subject: Invitation for feedback/ representation(s), if any, on the Question Paper and the Answer Keys of the written test held on 12.03.2025 for the post of Technical Superintendent (Medical) [Job Ref. No. 50506478].

The Question Paper and the Answer Key of the Written Test conducted for the post of **Technical Superintendent (Medical) [Job Ref. No. 50506478]** on **Wednesday, 12.03.2025**, are enclosed below as **Annexure I**.

Feedback/ concern(s)/ representation(s), if any, is/are invited from the candidates regarding the answer to any question, on the email id uic.rec.staff@iitb.ac.in latest by **today, i.e., on 12.03.2025, before 01:00 p.m.**

Note: Candidates must be specific in their representations/ concerns/ feedback and indicate their question(s) and explanation(s), if desired.

By Order

INDIAN INSTITUTE OF TECHNOLOGY BOMBAY

Written Examination for the Post of TECHNICAL SUPERINTENDENT (MEDICAL)
JOB REF. NO. 50506478 ID No:

Duration: 1.00 hrs

Maximum Marks: 60

INSTRUCTIONS TO CANDIDATES

Read the instructions carefully before answering the questions: -

1. **IMMEDIATELY AFTER THE COMMENCEMENT OF THE EXAMINATION, YOU SHOULD CHECK THAT THIS BOOKLET DOES NOT HAVE ANY UNPRINTED OR TORN OR MISSING PAGES OR ITEMS ETC. IF SO, GET IT REPLACED BY A COMPLETE TEST BOOKLET.**
2. **Use only Black Ball Point Pen to the Sheet.**
3. Do not write anything else on the sheet except the required information.
4. **This Test Booklet contains 60 questions in MCQ Mode.**
5. After the completion of the exam, please submit your answer sheets to the Invigilator only.
6. **Marking Scheme**
THERE WILL BE NO NEGATIVE MARKING FOR WRONG ANSWERS MARKED BY A CANDIDATE IN THE OBJECTIVE TYPE QUESTION PAPERS.
 - i. There are four alternatives for the answer to every question.
 - ii. If a candidate gives more than one answer, it will be treated as a wrong answer even if one of the given answers happens to be correct.

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**WRITTEN EXAMINATION FOR THE POST OF
TECHNICAL SUPERINTENDENT (MEDICAL)
(Job Ref. No. 50506478)**

Date: 12.3.2025
Max. Time. 60 min.
No. of Questions: 60
Maximum marks: 60

Please read all questions carefully and answer only one choice

1. The durable material for making heat resistant glass-ware is
 - A. Polyethylene
 - B. Soda lime
 - C. Polystyrene
 - D. Borosilicate

2. The pipette that has a bulged-out portion in the middle is called:
 - A. Mohr
 - B. Pasteur
 - C. Volumetric
 - D. Micropipette

3. The universal disinfectant used in the Laboratory workplace is:
 - A. Methylated spirit
 - B. Formalin
 - C. Hypochlorite
 - D. Isopropyl alcohol

4. A patient has acute watery diarrhoea and stool exam reveals motile comma shaped organisms. The infection is likely to be:
 - A. Ulcerative colitis
 - B. Cholera
 - C. Diphtheria
 - D. Staphylococcus

5. The method used for estimation of serum creatinine is
 - A. Ortho-toluidine
 - B. Uricase
 - C. Diacetyl-monoxime
 - D. Jaffe

6. The precursor cell of a neutrophil is:

- A. Megaloblast
- B. Myeloblast
- C. Erythroblast
- D. Plasmablast

7. Length of Wintrobe tube used for estimation of ESR is:

- A. 110 mm
- B. 120 nun
- C. 150 mm
- D. 160 mm

8. The melting point of paraffin wax used in histopathology lab is:

- A. 60° - 62° C
- B. 46° - 48° C
- C. 75° - 77° C
- D. 68° - 70° C

9. The special stain used to demonstrate fungus is:

- A. Congo red
- B. Haematoxylin Eosin
- C. Silver stain
- D. Von Kossa

10. Kala azar is an infection caused by

- A. Trypanosomes
- B. Giardia
- C. Plasmodium
- D. Leishmania

11. The destruction of all microorganisms including spores is called:

- A. Sanitation
- B. Antisepsis
- C. Sterilization
- D. Disinfection

12. The anti-coagulant "double oxalate" is combination of:

- A. Ammonium and calcium oxalate
- B. Potassium and ammonium oxalate
- C. Calcium and potassium oxalate
- D. Potassium and magnesium oxalate

13. A buffy coat contains:

- A. Red blood cells
- B. Serum
- C. Leucocytes
- D. Plasma

14. The first phase in the Growth curve of bacteria inoculated into a medium is:

- A. Log Phase
- B. Lag Phase
- C. Stationary Phase
- D. Generation Phase

15. The agarose derived from seaweeds is used for:

- A. Spectrophotometry
- B. Gel electrophoresis
- C. Polymerase chain reaction
- D. Tissue culture

16. Oil immersion objective lens has power of:

- A. 100 x
- B. 40 x
- C. 20 x
- D. 10 x

17. All of the following except one are clearing reagents:

- A. Toluene
- B. Chloroform
- C. Xylene
- D. Alcohol

18. The enzyme that produces DNA from RNA is

- A. RNAase P
- B. Reverse transcriptase
- C. Ribonuclease
- D. RNA polymerase

19. Refractive index of oil immersion used in light microscopy is:

- A. 1.48
- B. 1.15
- C. 1.51
- D. 1.23

20. Helper and Cytotoxic cells are

- A. B cells
- B. T cells
- C. Monocytes
- D. Macrophages

21. The normal Arterial Carbon dioxide level in human blood is:

- A. 25 mmHg
- B. 40 mmHg
- C. 50 mmHg
- D. 60 mmHg

22. Excessive ingestion of carbohydrate free diet (Diet not containing carbohydrates) causes

- A. Diabetes insipidus
- B. Ketosis
- C. Obesity
- D. Bleeding

23. The first antibody that is produced in response to an infection is:

- A. Ig M
- B. Ig G
- C. Ig A
- D. Ig E

24. The most commonly used mounting medium is:

- A. Glycerine
- B. Distilled water
- C. DPX
- D. Canada Balsam

25. Frozen section is used to demonstrate:

- A. Lipids
- B. Proteins
- C. Pigments
- D. Melanin

26. In a Skin scraping, the KOH preparation is used for identification of

- A. Herpes virus infection
- B. Leprosy
- C. Scabies
- D. Fungal infection

27. The stool specimen is clay coloured in a patient who has:

- A. Obstructive jaundice
- B. Haemorrhage in the intestine
- C. Taken iron tablets
- D. Consumed Bismuth salts

28. A patient has diabetic ketoacidosis. The bedside urine test that diagnoses the presence of ketones in the urine is:

- A. Sulphosalicylic acid test
- B. Rothera test
- C. Ehrlich test
- D. Benzidine test

29. In electron microscope, what material is used as an objective lens?

- A. Magnetic coils
- B. Superfine glass
- C. Aluminium foils
- D. Electrons

30. The primary fixative used in histopathology is:

- A. Formaldehyde
- B. Alcohol
- C. Acetone
- D. Glutaraldehyde

31. A complement fixation test was initially used to diagnose:

- A. Syphilis
- B. Hepatitis B
- C. HIV infection
- D. Tuberculosis

32. Bacteria that can grow in the presence of oxygen are called:

- A. Obligate aerobes
- B. Facultative anaerobes
- C. Obligate anaerobes
- D. Microaerophiles

33. What is the significance of quality control in laboratory equipment?

- A. To monitor the accuracy and precision of test results
- B. To identify and correct errors in the testing process
- C. To ensure compliance with regulatory standards
- D. All of the above

34. Normality is expressed as

- A. gms/litre
- B. gram equivalent /litre
- C. moles/ 100gms
- D. grams/litre

35. Fragments of RBC are called.

- A. Burr
- B. Acanthocytes
- C. Sickle
- D. Schistocytes

36. Which of the following reagent is used in sickling test?

- A. 2% Sodium metabisulphite
- B. 2% sodium hydroxide
- C. Ammonium hydroxide
- D. 10% sodium bicarbonate

37. Capillary fragility is assessed by test

- A. Hess
- B. Frei's
- C. Garden's
- D. Schilling

38. Viruses can be cultured in all except

- A. Tissue culture
- B. Bacterial lawn
- C. Nutrient media
- D. Embryonated eggs

39. Cold sterilization is generally done by using

- A. Non-ionizing radiations
- B. Gamma radiation
- C. Sun light
- D. Infra-Red light

40. Heparin is released from

- A. Mast cell
- B. Macrophage
- C. Eosinophil
- D. Neutrophil

41. Prozone phenomenon is seen in excess of

- A. Antigen
- B. Antibody
- C. Hapten
- D. Complement

42. What is the role of a laboratory information system (LIS) in patient data management?

- A. To store patient information
- B. To generate reports
- C. To track test results
- D. All of the above

43. Acid phosphatase is a diagnostic marker of

- A. Pancreatic cancer
- B. Prostate cancer
- C. Lung cancer
- D. Hepatic cancer

44. The pH value of blood is normally between _____ and _____.

- A. 6.0, 6.5
- B. 7.0, 7.35
- C. 7.35, 7.45
- D. 7.45, 7.98

45. Which of the following is Romanowsky stain?

- A. Leishman
- B. giemsa
- C. jenners
- D. All the above

46. Testing a refrigerated specimen that has not warmed to room temperature will adversely affect:

- A. Enzymatic reactions
- B. Dye-binding reactions
- C. The sodium nitroprusside reaction
- D. Diazo reactions

47. All of the following are important to protect the integrity of reagent strips except:

- A. Removing the desiccant from the bottle
- B. Storing in an opaque bottle
- C. Storing at room temperature
- D. Resealing the bottle after removing a strip

48. The coagulase is done to differentiate:

- A. *Staphylococcus aureus* from *Staphylococcus epidermidis*
- B. *Staphylococcus epidermidis* from *Neisseria meningitidis*
- C. *Streptococcus pyogenes* from *Enterococcus faecalis*
- D. *Streptococcus pyogenes* from *Staphylococcus aureus*

49. Which test cannot be performed on a serum sample?

- A. Iron
- B. Vitamin B12
- C. Total lipids
- D. Clotting factors

50. Cholesterol estimation is done by the following method:

- A. Molisch method
- B. Benedict's method
- C. Zak's ferric chloride method
- D. Jaffes method

51. Temperature range used for autoclaving is....

- A. 100°C for 10 min
- B. 100°C for 30 min
- C. 121°C for 15 min
- D. 121°C for 30 min

52. The solution used to fix a pap smear is:

- A. wright stain
- B. haematoxylin
- C. physiological saline
- D. cytospray

53. Which of the following type of cholesterol is called as good cholesterol?

- A. HDL
- B. Chylomicrons
- C. VLDL
- D. LDL

54. A urine specimen with a pH of 9.0:

- A. Indicates metabolic alkalosis
- B. Should be recollected
- C. May contain calcium oxalate crystals
- D. Is seen after drinking cranberry juice

55. Manual Broth dilution for AST is recommended for:

- A. Colistin
- B. Vancomycin
- C. Both A & B
- D. Erythromycin

56. Which of the following bacteria is an indicator of obligate anaerobiosis:

- A. Pseudomonas
- B. Staphylococcus aureus
- C. Clostridia
- D. none of the above

57. Which of the following is an automated continuous monitoring system of Blood culture:

- A. BacT/Alert 3D
- B. BACTEC
- C. VERSA TEK
- D. All of the above

58. Which of the following quality standards are applicable to medical laboratories:

- A. ISO;15189
- B. ISO;IEC17021
- C. ISO;IEC17025
- D. ISO;IEC 17011

59. Laboratory acquired infections can be caused by all except:

- A. Brucella
- B. Corynebacteria
- C. Mycobacterium
- D. Lactobacillus

60. A chemical or mixture of chemicals that is used to kill microorganisms on laboratory bench tops, but not necessarily spores is:

- A. Antiseptic
- B. Sporicidal
- C. Disinfectant
- D. Sanitizer

Answer key for the question paper of Technical Superintendent (Medical)
(Job Ref. No. 50506478)

ANSWER KEY

1. D	2. C	3. C	4. B	5. D
6. B	7. A	8. A	9. C	10. D
11. C	12. B	13. C	14. B	15. B
16. A	17. D	18. B	19. C	20. B
21. B	22. B	23. A	24. C	25. A
26. D	27. A	28. B	29. A	30. A
31. A	32. A	33. D	34. B	35. D
36. A	37. A	38. B	39. B	40. A
41. B	42. D	43. B	44. C	45. D
46. A	47. A	48. A	49. D	50. C
51. C	52. D	53. A	54. A	55. C
56. C	57. A	58. A	59. D	60. C