

LEC 4 Q- MICROBIOLOGY:

1. **What does the Indole Test specifically test for?**
 - A) Urease production
 - B) Tryptophanase production
 - C) Glucose fermentation
 - D) Acetoin production

2. **Which reagent is used in the Indole Test?**
 - A) KOH
 - B) Kovac's reagent
 - C) Phenol red
 - D) Ferric sulfide

3. **What color indicates a positive result in the Methyl Red Test?**
 - A) Yellow
 - B) Red
 - C) Blue
 - D) Green

4. **Which test differentiates Enterobacteriaceae from Pseudomonas?**
 - A) Urease Test
 - B) Oxidase Test
 - C) Coagulase Test
 - D) Citrate Utilization Test

5. **A purple result in the Ornithine Decarboxylase Test indicates what?**
 - A) Negative result
 - B) Positive result
 - C) No sugar fermentation

D) Presence of H₂S

6. **What does a yellow color in the TSI Test indicate?**

A) No fermentation

B) H₂S production

C) Glucose and/or lactose/sucrose fermentation

D) Urease presence

7. **Which of the following tests is used to distinguish *Staphylococcus aureus* from other species?**

A) Catalase Test

B) Coagulase Test

C) API Test

D) Indole Test

8. **In the Urease Test, what does a pink result indicate?**

A) Urease enzyme presence

B) No urease enzyme

C) Presence of H₂S

D) Acid production

9. **What is indicated by a black color in the TSI Test?**

A) Positive for glucose fermentation

B) H₂S production

C) Negative for acid production

D) Positive for urease presence

10. **Which of the following is NOT tested in the Triple Sugar Iron Test?**

A) Glucose fermentation

B) Lactose fermentation

C) Acetoin production

D) H₂S production

11. The API test is used for:

A) Testing urease activity

B) Identifying specific species through multiple biochemical reactions

C) Detecting H₂S production

D) Testing for tryptophanase activity

12. What does a result of K/A in the TSI Test indicate?

A) Positive for glucose and lactose/sucrose fermentation

B) Positive for glucose only

C) No fermentation

D) H₂S production

13. Which test uses phenol red as an indicator?

A) Methyl Red Test

B) Citrate Utilization Test

C) TSI Test

D) Urease Test

14. A green color in the Phenylalanine Deaminase Test indicates:

A) Presence of proteus and not salmonella or shigella

B) Negative for phenylalanine deaminase

C) Urease production

D) Positive for acetoin

15. What does a red color in the Voges-Proskauer Test indicate?

- A) Glucose fermentation
- B) Acetoin production
- C) Urease activity
- D) Citrate utilization

16. In the Citrate Utilization Test, what does a blue color indicate?

- A) Negative result
- B) Positive result for citrate metabolism
- C) Presence of urease
- D) H₂S production

17. What does the presence of bubbles in the Catalase Test indicate?

- A) Presence of H₂S
- B) Urease activity
- C) Positive catalase activity
- D) Acetoin production

18. Which of the following tests differentiates lactose fermenters from non-fermenters?

- A) Indole Test
- B) Methyl Red Test
- C) TSI Test
- D) Oxidase Test

19. Which enzyme is tested for in the Urease Test?

- A) Tryptophanase
- B) Catalase

- C) Urease
- D) Deaminase

20. A yellow result in the TSI Test indicates what about the organism?

- A) It cannot ferment glucose.
- B) It is a non-lactose fermenter.
- C) It ferments glucose and/or lactose/sucrose.
- D) It produces H₂S.

21. What is the main principle of the Oxidase Test?

- A) Detection of H₂O₂
- B) Detection of oxidase enzyme
- C) Fermentation of glucose
- D) Production of ammonia

22. In the context of the Methyl Red Test, what does a yellow result indicate?

- A) Strong acid production
- B) No acid production
- C) Acetoin production
- D) Glucose fermentation

23. Which biochemical reaction is indicated by a green color in the Phenylalanine Deaminase Test?

- A) Presence of urease
- B) Acetoin production
- C) Presence of phenylalanine deaminase
- D) Glucose fermentation

24. What does a negative result (red) in the Coagulase Test suggest?

- A) Presence of *Staphylococcus aureus*
- B) Presence of *Staphylococcus saprophyticus*
- C) Absence of coagulase enzyme
- D) Presence of enteric bacteria

25. What does the presence of H₂S in the TSI Test produce?

- A) Gas bubbles
- B) Yellow color
- C) Black precipitate
- D) Blue color

26. Which test specifically helps differentiate between Staphylococci and Streptococci?

- A) Methyl Red Test
- B) Catalase Test
- C) Coagulase Test
- D) Oxidase Test

27. A positive result in the Urease Test will appear as what color?

- A) Yellow
- B) Pink
- C) Red
- D) Green

28. In the TSI Test, what result indicates that the organism cannot utilize glucose or lactose/sucrose?

- A) A/A

B) K/A

C) K/K

D) A/K

29. What color change indicates a positive Voges-Proskauer Test?

A) Yellow

B) Green

C) Red

D) Blue

30. The API test is primarily used for what purpose?

A) To test for glucose fermentation

B) To identify specific bacterial species

C) To measure urease activity

D) To detect H₂S production

31. What is the primary purpose of the Methyl Red Test?

A) To detect urease production

B) To assess glucose fermentation and acid production

C) To measure oxidase activity

D) To identify the presence of H₂S

32. Which test would you use to confirm the presence of acetoin in a bacterial culture?

A) Indole Test

B) Voges-Proskauer Test

C) Citrate Test

D) Urease Test

33. If an organism shows a positive result in the Citrate Utilization Test, what can be inferred?

- A) It produces urease.
- B) It can use citrate as its sole carbon source.
- C) It ferments glucose.
- D) It produces H₂S.

34. What color change indicates a negative result in the Urease Test?

- A) Pink
- B) Yellow
- C) Red
- D) Green

35. In the context of the TSI Test, what does an A/A result indicate?

- A) Positive for glucose only
- B) Positive for both glucose and lactose/sucrose
- C) Negative for fermentation
- D) Positive for H₂S production

36. Which biochemical test can help differentiate Salmonella from Shigella?

- A) Indole Test
- B) Phenylalanine Deaminase Test
- C) Coagulase Test
- D) Catalase Test

37. What is the principle behind the Oxidase Test?

- A) Detection of hydrogen sulfide
- B) Detection of phenylalanine
- C) Detection of cytochrome c oxidase
- D) Detection of urease

38. If a culture shows bubbles in the Catalase Test, what does this indicate?

- A) Positive for urease
- B) Presence of catalase enzyme
- C) Fermentation of sugars
- D) Negative result

39. Which of the following results would indicate a non-fermenter in the TSI Test?

- A) K/A
- B) A/A
- C) K/K
- D) A/K

40. In the Voges-Proskauer Test, a positive result indicates that the organism can:

- A) Ferment lactose
- B) Produce acetoin
- C) Reduce sulfur
- D) Produce urease

41. A green color in the Citrate Test indicates:

- A) Negative for citrate utilization

- B) Positive for citrate utilization
- C) Positive for urease production
- D) Presence of H₂S

42. What does the Coagulase Test help to identify specifically?

- A) Urease-producing bacteria
- B) *Staphylococcus aureus*
- C) Enterobacteriaceae
- D) Acetoin producers

43. What indicates the presence of hydrogen sulfide in the TSI Test?

- A) Yellow color
- B) Black precipitate
- C) Red color
- D) Blue color

44. A yellow result in the Methyl Red Test indicates what about the organism?

- A) It produces strong acids.
- B) It does not produce acids from glucose.
- C) It produces urease.
- D) It can utilize citrate.

45. Which test would likely be negative for Enterobacteriaceae?

- A) Oxidase Test
- B) Catalase Test
- C) Coagulase Test

D) Urease Test

46. What does the presence of a fibrin clot in the Coagulase Test indicate?

- A) Presence of glucose fermenters
- B) Positive for *Staphylococcus aureus*
- C) Production of urease
- D) Negative for catalase

47. A yellow color in the TSI Test after inoculation suggests what type of fermentation?

- A) Only lactose
- B) Only sucrose
- C) Glucose and/or lactose/sucrose
- D) No fermentation

48. Which of the following tests specifically measures the production of ammonia?

- A) Indole Test
- B) Urease Test
- C) Methyl Red Test
- D) Catalase Test

49. In the Oxidase Test, a positive result appears as what color?

- A) Green
- B) Yellow
- C) Blue to purple
- D) Red

50. Which of the following is NOT a characteristic of the API test?

- A) Tests multiple biochemical reactions
- B) Used for species identification
- C) Measures H₂S production
- D) Involves inoculation and color change observation

51. A positive result in the Ornithine Decarboxylase Test is indicated by what color change?

- A) Yellow
- B) Red
- C) Purple
- D) Green

52. What does a negative Voges-Proskauer Test indicate?

- A) No glucose fermentation
- B) No acetoin production
- C) H₂S production
- D) Urease production

53. What does a K/A result in the TSI Test indicate about the organism?

- A) It ferments glucose only.
- B) It ferments lactose/sucrose.
- C) It cannot ferment sugars.
- D) It produces H₂S.

54. In the Methyl Red Test, which of the following results would be considered positive?

- A) Yellow
- B) Red

- C) Blue
- D) Green

55. Which test helps in the differentiation of Gram-positive cocci?

- A) Indole Test
- B) Catalase Test
- C) TSI Test
- D) Citrate Utilization Test

56. What is the primary reaction observed in the Urease Test?

- A) Production of hydrogen sulfide
- B) Breakdown of urea to ammonia
- C) Fermentation of sugars
- D) Acetoin production

57. What is indicated by a green color change in the Phenylalanine Deaminase Test?

- A) Negative for deaminase
- B) Positive for deaminase
- C) Presence of urease
- D) Production of ammonia

58. What does the presence of black precipitate in the TSI Test signify?

- A) Glucose fermentation
- B) Lactose fermentation
- C) H₂S production
- D) Urease activity

59. Which result indicates that an organism can ferment both glucose and lactose/sucrose in the TSI Test?

- A) K/K
- B) K/A
- C) A/A
- D) A/K

60. Which test is used to assess the ability of an organism to produce an enzyme that breaks down phenylalanine?

- A) Indole Test
- B) Catalase Test
- C) Phenylalanine Deaminase Test
- D) Methyl Red Test

61. What is the main indication of a negative result in the Catalase Test?

- A) Presence of bubbles
- B) Absence of bubbles
- C) Color change to yellow
- D) Formation of a precipitate

62. What does a K/K result in the TSI Test indicate about the organism's metabolic capabilities?

- A) It can ferment both glucose and lactose/sucrose.
- B) It cannot ferment any sugars.
- C) It produces H₂S.
- D) It is urease positive.

63. **In the Indole Test, what does a red ring after adding Kovac's reagent signify?**
- A) Negative for tryptophanase
 - B) Positive for tryptophanase
 - C) Positive for acetoin
 - D) Negative for acid production
64. **Which organism is most likely to show a positive result in the Coagulase Test?**
- A) *Staphylococcus saprophyticus*
 - B) *Staphylococcus epidermidis*
 - C) *Staphylococcus aureus*
 - D) *Streptococcus pyogenes*
65. **A purple result in the Ornithine Decarboxylase Test suggests the organism is capable of:**
- A) Fermenting glucose
 - B) Decarboxylating ornithine
 - C) Producing urease
 - D) Reducing sulfur
66. **What does a yellow result in the Urease Test indicate?**
- A) Urease is present
 - B) Urease is absent
 - C) The medium is alkaline
 - D) The organism can ferment lactose

67. **Which test would you perform to check for the ability to produce hydrogen sulfide?**
- A) TSI Test
 - B) Oxidase Test
 - C) Indole Test
 - D) Methyl Red Test
68. **What is indicated by a blue color in the Citrate Utilization Test?**
- A) Negative for citrate utilization
 - B) Positive for citrate utilization
 - C) Presence of urease
 - D) H₂S production
69. **A positive result in the Voges-Proskauer Test confirms which metabolic pathway?**
- A) Alcohol fermentation
 - B) Mixed acid fermentation
 - C) Acetoin production
 - D) Glucose respiration
70. **What does a red result in the Methyl Red Test indicate about the pH of the medium?**
- A) Alkaline
 - B) Neutral
 - C) Acidic
 - D) Basic
71. **Which of the following is a characteristic of the API Test?**
- A) Requires a single biochemical reaction

- B) Primarily used for Gram-negative bacteria
- C) Involves multiple tests for species identification
- D) Detects only acid production

72. A black precipitate in the TSI Test suggests the presence of:

- A) Glucose fermentation
- B) H₂S production
- C) Lactose fermentation
- D) Urease activity

73. What does an alkaline result in the Methyl Red Test signify?

- A) Positive for strong acid production
- B) Negative for glucose fermentation
- C) Positive for urease activity
- D) Negative for acetoin production

74. In the context of the Catalase Test, what does H₂O₂ stand for?

- A) Hydrogen oxide
- B) Hydroxide peroxide
- C) Hydrogen peroxide
- D) Hydrocarbon peroxide

75. Which test would be used to differentiate between lactose fermenters and non-fermenters?

- A) Urease Test
- B) Indole Test
- C) TSI Test

D) Oxidase Test

76. A negative reaction in the Oxidase Test appears:

A) Blue to purple

B) Yellow

C) Colorless

D) Red

77. What does the Phenylalanine Deaminase Test help to identify?

A) Lactose fermenters

B) Presence of phenylalanine deaminase

C) H₂S producers

D) Urease activity

78. Which color indicates a negative result in the Citrate Utilization Test?

A) Blue

B) Green

C) Yellow

D) Red

79. In the TSI Test, what does a result of A/K indicate?

A) Positive for glucose only

B) Positive for glucose and lactose

C) Negative for fermentation

D) Positive for H₂S

80. Which test would be least useful for identifying *Staphylococcus aureus*?

A) Coagulase Test

- B) Indole Test
- C) Catalase Test
- D) Methyl Red Test

81. Which test helps differentiate between Enterobacteriaceae and Pseudomonas?

- A) Coagulase Test
- B) Oxidase Test
- C) Indole Test
- D) Catalase Test

82. A positive result in the Indole Test is indicated by which of the following?

- A) Yellow color
- B) Red ring after adding Kovac's reagent
- C) Black precipitate
- D) Blue color

83. What does a red color indicate in the Methyl Red Test?

- A) Negative for acid production
- B) Positive for acid production
- C) Positive for acetoin
- D) No fermentation

84. Which biochemical test is primarily used to identify urease-producing organisms?

- A) Phenylalanine Deaminase Test
- B) Urease Test
- C) Indole Test

D) Citrate Utilization Test

85. In the context of the TSI Test, what does the presence of a yellow butt indicate?

A) Glucose fermentation

B) Lactose fermentation

C) No fermentation

D) H₂S production

86. Which of the following indicates a negative result for H₂S production in the TSI Test?

A) Black precipitate

B) Yellow butt

C) Red slant

D) Yellow slant

87. What does a purple color change in the Ornithine Decarboxylase Test suggest?

A) Positive for decarboxylation

B) Negative for decarboxylation

C) Positive for glucose fermentation

D) Negative for urease

88. Which result in the Coagulase Test suggests the organism is not *Staphylococcus aureus*?

A) Formation of a fibrin clot

B) No clot formation

C) Positive catalase reaction

D) Negative indole result

89. **What does a black precipitate in the TSI Test indicate?**

- A) Glucose fermentation
- B) H₂S production
- C) Lactose fermentation
- D) Urease activity

90. **A blue color in the Citrate Utilization Test indicates:**

- A) Negative for citrate utilization
- B) Positive for citrate utilization
- C) Presence of urease
- D) H₂S production

91. **In the context of the Methyl Red Test, what does a yellow result imply about the organism?**

- A) It produces strong acids.
- B) It does not produce significant acid.
- C) It is urease positive.
- D) It ferments sugars.

92. **Which test can indicate the fermentation capabilities of an organism with respect to glucose and lactose/sucrose?**

- A) TSI Test
- B) Oxidase Test
- C) Indole Test
- D) Catalase Test

93. **A negative result in the Catalase Test would show:**

- A) Bubbles

- B) No bubbles
- C) Yellow color
- D) Red color

94. Which test is used to differentiate between lactose fermenters and non-fermenters?

- A) Indole Test
- B) Methyl Red Test
- C) TSI Test
- D) Coagulase Test

95. What does a green color in the Phenylalanine Deaminase Test signify?

- A) Absence of phenylalanine deaminase
- B) Presence of phenylalanine deaminase
- C) Positive for urease
- D) Negative for acid production

96. In the Voges-Proskauer Test, a positive result suggests the organism can produce:

- A) Acetic acid
- B) Acetoin
- C) Lactic acid
- D) Ethanol

97. What is the significance of the color change in the Oxidase Test?

- A) Indicates the presence of urease
- B) Indicates the presence of oxidase enzyme
- C) Indicates acid production

D) Indicates fermentation capability

98. A yellow result in the Urease Test indicates what about the pH?

A) Acidic pH

B) Neutral pH

C) Alkaline pH

D) No change in pH

99. Which of the following is true regarding the API Test?

A) It is a single biochemical test.

B) It is primarily for Gram-positive bacteria.

C) It assesses multiple biochemical characteristics.

D) It does not involve color change observations.

100. Which result indicates that an organism can ferment glucose but not lactose/sucrose in the TSI Test?

A) A/A

B) K/A

C) K/K

D) A/K

ANSWER:

1 B

2 B

3 B


4 B

5 B

6 C

7 B

8 A



9 B
10 C
11 B
12 B
13 D
14 A
15 B
16 B
17 C
18 C
19 C
20 C
21 B
22 B
23 C
24 C
25 C
26 B
27 B
28 C
29 C
30 B
31 B
32 B
33 B
34 B
35 B
36 B
37 C
38 B
39 C
40 B
41 A
42 B
43 B
44 B
45 A
46 B



47 C

48 B

49 C

50 C

51 C

52 B

53 A

54 B

55 B

56 B

57 B

58 C

59 C

60 C

61 B

62 B

63 B

64 C

65 B

66 B

67 A

68 B

69 C

70 C

71 C

72 B

73 B

74 C

75 C

76 C

77 B

78 B

79 A

80 B

81 B

82 B

83 B

84 B

85 A
86 A
87 A
88 B
89 B
90 B
91 B
92 A
93 B
94 C
95 B
96 B
97 B
98 A
99 C
100 B

Done By: Khaled Ghanayem