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RAN-1903000203020071

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S. Y. B. Sc. (Sem. - III) Examination

March - 2023

MLT-05 : Environmental and Food Microbiology

સૂચના : / Instructions

(1)

નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fill up strictly the details of ☛ signs on your answer book

Name of the Examination:

☛ **S. Y. B. Sc. (Sem. - III)**

Name of the Subject :

☛ **MLT-05 : Environmental and Food Microbiology**

Subject Code No.: **1903000203020071**

Seat No.:

Student's Signature

(2) All questions are compulsory.

***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 are given on back side of the provided O.M.R. Sheet.

SET - A

Q. 1. Which bacterium is used as source of biopesticide?

A. *Eschericha coli*
B. *Pseudomonas aeruginosa*
C. *Claviceps purpureas*
D. *Bacillus thuringiensis*

Q. 2. Select the INCORRECT statement from the below:

A. BGA is used as biofertilizer.
B. Biofertilizers are cost effective as well as eco-friendly.
C. Biofertilizers does not have a favourable influence on soil health.
D. Biofertilizers are safe to crops and users both.

Q. 3. Rhizosphere effect can be determined by _____ ratio.

A. A:B
B. X:Y
C. R:S
D. R:T

Q. 4. Which bacteria is responsible for the following, reaction?

Reaction: Ammonia $\rightarrow$ Nitrite

A. Azotobacter
B. Rhizobium
C. Nitrobacter
D. Nitrosomonas

Q. 5. Which of the following is an example of symbiotic nitrogen fixer?

A. *Rhizobium*
B. *Azotobacter*
C. *Azolla*
D. *Clostridium*

Q. 6. Which materials are present in the environment of rhizosphere?

A. Polysaccharides
B. Nucleotides
C. Vitamins
D. All of the above

Q. 7. Which of the following is harmful microbial interaction?

A. Commensalism
B. Cooperation
C. Mutualism
D. Antagonism

Q. 8. The transformation of nitrates to gaseous nitrogen is accomplished by microorganisms in a series of biochemical reactions. The process is known as _____.

A. Nitrification
B. Denitrification
C. Ammonification
D. Nitrogen fixation

Q. 9. IPM stands for:

A. Integrated Pest Manufacture
B. Integrated Plant Management
C. Integrated Plant Manufacture
D. Integrated Pest Management

Q. 10. Constructed wetlands are known as _____ wetlands.

A. Natural
B. Mechanical
C. Artificial
D. All of the above

Q. 11. Give full form of MPN.

A. Massive Proper Number
B. Massive Probable Number
C. Most Positive Number
D. Most Probable Number

Q. 12. The water testing relies on the detection of indicator organisms known as:

A. Acid-fast bacteria
B. Cyanobacteria
C. Coliforms
D. Dinoflagellates

Q. 13. Biological nutrient removal by anammox reaction focuses on removal of:

A. Sulfur
B. Carbondioxide
C. Heavy metal
D. Nitrogen

Q. 14. Which of the following test for coliforms is a modification of MPN procedure?

A. Voges Proskauer (VP) test
B. Standard Plate Count (SPC)
C. Presence-Absence (PA) test
D. Indole test

Q. 15. In which secondary method of wastewater treatment process microorganisms are attached to crushed stones/pebbles forming biofilm reactor?

A. Extended aeration treatment
B. Trickling filter
C. Aerobic activated sludge
D. Anaerobic digester

Q. 16. Coliforms are:

A. Obligate aerobe
B. Facultative anaerobe
C. Obligate anaerobe
D. Microaerophile

Q. 17. The level of an indicator bacteria in contaminated water should have some direct relationship with:

A. Degree of fecal pollution.
B. Industrial pollution.
C. Radioactive waste.
D. Degree of oil spills.

Q. 18. Tertiary treatment of wastewater is particularly important to remove:

A. Carbon, Nitrogen
B. Sulphate, Carbon
C. Nitrogen, Phosphorus
D. Phosphorus, Sulphate

Q. 19. Sewage is:

A. Industrial waste
B. Domestic waste
C. Brewery waste
D. Biomedical waste

Q. 20. In the final step of wastewater treatment process, water is disinfected by:

A. Chlorination
B. Eutrophication
C. Sulfonation
D. Flocculation

Q. 21. In tertiary treatment process of wastewater, phosphorus is removed by:

A. Lime
B. Alum
C. Ferric chloride
D. All of the above

Q. 22. Indicator used for presence-absence test is:

A. Malachite green
B. Methyl red
C. Bromocresol purple
D. Methyl orange

Q. 23. The magnitude of BOD of wastewater is related to:

A. Bacterial count
B. Amount of organic matter
C. Amount of inorganic matter
D. All of the above

Q. 24. The _____ is the most favourable for growth and survival of microorganisms.

A. Troposphere
B. Stratosphere
C. Mesosphere
D. Thermosphere

Q. 25. Microorganisms in air have _____.

A. Constant survival
B. Permanent survival
C. Transient survival
D. Lasting survival

Q. 26. What is the role of 'beads' in air sampler bead bubbler device?

A. To support glass bubbler.
B. To facilitate the formation of bubbles.
C. To adjust volume of liquid broth.
D. For proper assembly of device.

Q. 27. _____ is based on the principle that the particles move towards the lower temperature region when subjected to a strong temperature gradient.

A. Thermal precipitation
B. Electrostatic precipitation
C. Centrifugation
D. Ultracentrifugation

Q. 28. In Bead Bubbler device, glass beads of size about _____ size in diameter are kept around the glass bubbler.

A. 1 mm
B. 3 mm
C. 5 mm
D. 7 mm

Q. 29. Droplets expelled during coughing consists of:

A. Saliva and microorganisms

B. Saliva, mucus and microorganisms

C. Only saliva

D. Only microorganisms

Q. 30. Who developed a multistage sieve device?

A. Bourdillon

B. Anderson

C. Hiltner

D. Koch

Q. 31. Which of the following can survive severe conditions of high altitudes?

A. Bacterial spore

B. Dinoflagellates

C. Mold

D. Yeast

Q. 32. _____ consists of a glass folin aeration tube with a perforated bulb with six holes at one end.

A. Lemon sampler

B. Bead bubbler device

C. Sieve device

D. Slit device

Q. 33. _____ is not a natural environment for the growth and reproduction of microorganisms.

A. Soil

B. Water

C. Air

D. Food

Q. 34. Select an INCORRECT option from the below.

A. In slit device, the air is drawn through a very narrow slit onto a petridish containing agar medium.

B. Dust particles tend to contain microorganisms.

C. Non-sporeformer belonging to genera *Sarcina, Micrococcus, Alcaligenes* is found in air.

D. Microorganisms survive in the air for fixed period of time.

Q. 35. Which method is commonly employed in laboratory for qualitative analysis of airborne microorganisms?

A. Standard Plate Count
B. Multiple Tube Fermentation
C. Settling Plate technique
D. Coulter Counter

Q. 36. What is the concentration of ethanol in kefir?

A. 1%
B. 2%
C. 5%
D. 10%

Q. 37. Which of the following chemical agent helps to preserve cured meats by inhibiting growth of *Clostridium botulinum*?

A. Sodium chloride
B. Sodium nitrite
C. Sodium carbonate
D. Sodium hydroxide

Q. 38. Which of the following is mold-ripened cheese?

A. Blue cheese
B. Brick cheese
C. Swiss cheese
D. Cheddar cheese

Q. 39. The causative agent of Creutzfeldt-Jakob disease is:

A. Virus
B. Bacteria
C. Protozoa
D. Prions

Q. 40. Which of the following is an example of yeast-lactic fermentation?

A. Yakult
B. Kefir
C. Yogurt
D. Buttermilk

Q. 41. Eggs are rich in _____ enzyme that can lyse the cell wall of contaminating gram-positive bacteria.

A. Lysozyme
B. Ribozyme
C. Pectinase
D. Cellulase

Q. 42. _____ is an important microorganism for the production of wine and beer.

A. *Saccharomyces cerevisiae* B. *Lactobacillus bulgaricus*

C. *Aspergillus flavus* D. *Candida albicans*

Q. 43. Malolactic fermentation is an important step in the production of _____.

A. Cheese B. Pickle

C. Yogurt D. Wine

Q. 44. Wort is boiled with hops ;

A. To help in protein coagulation

B. To help in the process of fermentation

C. To provide bitter taste and flavor to the beer

D. All of the above

Q. 45. _____ is considered a leading cause of acute bacterial gastroenteritis in humans.

A. *Bacillus subtilis* B. *Campylobacter jejuni*

C. *Staphylococcus aureus* D. *Clostridium botulinum*

Q. 46. Probiotic is:

A. Good bacteria B. Harmful bacteria

C. Commensals D. Obligate Anaerobic bacteria

Q. 47. The cause of ergotism is:

A. *Campylobacter jejuni* B. *Aspergillus niger*

C. *Staphylococcus aureus* D. *Claviceps purpurea*

Q. 48. Which one among the following is responsible for formation of root nodules in leguminous plants?

A. *Rhizobium* B. *Clostridium*

C. *Azotobacter* D. *Aspergillus*

Q. 49. Mycorrhiza is symbiotic association between:

A. Fungus and bacteria
B. Fungus and plant root
C. Fungus and rock
D. Fungus and algae

Q. 50. The plant roots release _____ that stimulate rhizobial colonization of the root surfaces.

A. Flavonoid
B. Eugenol
C. Citric acid
D. Coumarins

_____

SPACE FOR ROUGH WORK