BIOLOGY

BOOKS - MTG BIOLOGY (HINGLISH)

MICROBES IN HUMAN WELFARE

Microbes In Human Welfare

1. Microbes are present in

A. Soil

B. thermal vents

C. polluted water

D. all of these

Answer: D

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2. Which of the following microbes is a proteinaceous infectious agent?

A. Fungi

B. Prions

C. Bacteria

D. Protozoa

Answer: B

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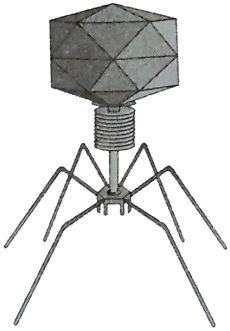
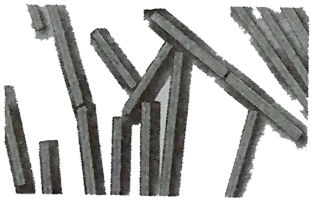
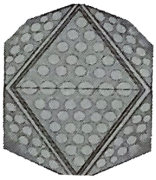
3. Match column I with column II and select the correct answer from the give codes.

Column I		Column II
A.		(i) Adenovirus
B.		(ii) Tobacco Mosaic Virus
C.		(iii) Bacteriophage

A. $A-(i), B-(ii), C-(iii)$

B. $A-(ii), B-(i), C-(iii)$

C. $A-(iii), B-(ii), C-(i)$

D. $A-(iii), B-(i), C-(ii)$

Answer: C

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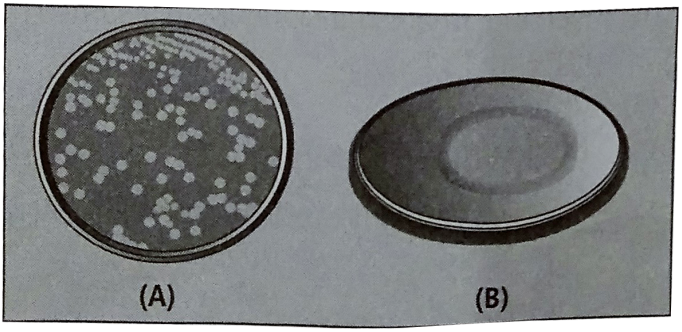
4. Refer to the given figure and select the correct match.



A. A-Fungal colony, B-Bacterial colony

B. A-Viral colony, B-Bacterial colony

C. A-Bacterial colony, B-Viral colony

D. A-Bacterial colony, B-Fungal colony

Answer: D

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5. The nutritive medium for growing bacteria and many fungi in laboraory is called

A. growth media

B. suspension media

C. culture media

D. colonial media

Answer: C

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6. The inoculum is added to the fresk milk in order to convert milk into curd, the term 'inoculum' here refers to

A. a starter rich in vitamin B_{12}

B. a starter rich in proteins

C. a starter containing millions of LAB

D. an aerobic digester

Answer: C

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7. Study the following statements regarding lactic acid bacteria (LAB) which are used to convert milk into curd.

(i) They produce acids that coagulate and partially digest the milk proteins.

(ii) A small amount of curd added to the fresh milk as an inoculum contains millions of LAB, which at suitable temperature, multiply and convert milk into curd.

(iii) Conversion of milk into curd improves its nutritional quality by increasing vitamin B_{12}.

(v) LAB may result in acidity in the stomach of human beings.

Which of the given statements are correct ?

A. (i) and (ii)

B. (ii) and (iii)

C. (i),(ii) and (iii)

D. (i), (ii), (iii) and (iv)

Answer: C

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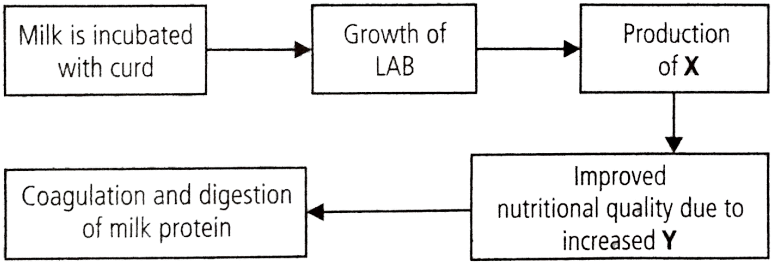
8. Study the following flow chart depicting the formation of curd from milk. Identify the missing parts X and Y.



A. X-Gluconic acid, Y-Vitamin B_1

B. X-Lactic acid, Y-Vitamin B_2

C. X-Lactic acid, Y-Vitamin B_{12}

D. X-Citric acid, Y-Vitamin C

Answer: C

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9. Read the following statements and select the correct option.

Statement 1: Besides curdling of milk, LAB also improve its nutritional quality by increasing vitamin B_{12}.

Statement 2: LAB, when present in human stomach, chech disease causing microbes.

A. Both statements 1 and 2 are correct

B. Statement 1 is correct but statement 2 is incorrect

C. Statement 1 is incorrect but statement 2 is correct

D. Both statements 1 and 2 are incorrect

Answer: A

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10. Which one of the following combinations of organisms are responsible for the formation and flavour of yoghurt gt

A. Lactobacillus bulgaricus and streptococcus thermophilus

B. Rhizobium melioti and Aztobactor

C. Bacillus subtillis and Escherichia coli

D. Bacillus megathermus and Xanthomonas species

Answer: A

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11. Which of the following food items is produced by the fermenting activity of microbes?

A. Idli B. Dosa

C. Toddy D. Cheese

A. A and C

B. C and D

C. A,B and C

D. A,B,C and D

Answer: D

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12. Read the following statements and select the incorrect one.

A. The dough used for making Dosa and Idli is fermented by bacteria.

B. Microbes are used to ferment fish, soybean and bamboo shoots to make food

C. The large holes in 'Swiss cheese' are due to production of large amount of CO_2 by a fungi called Propinibacterium sharmanii

D. Toddy' is a traditional drink of Southern India made by fermentation by microbes

Answer: C

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13. Match different organisms in column I with their uses in column I and select the correct answer from the given codes.

$Column I$	$Column II$
A. Lactobacillus acidophilus	(i)Formation of dough
B. Saccharomyces cerevisiae	(ii)single cell proteins
C. Propionibacterium shermanii	(iii)Conversion of milk into curd
D. Spirullina	(iv)Formation of Swiss cheese

A. $A-(iii), B-(i), C-(ii), D-(iv)$

B. $A-(iii), B-(i), C-(iv), D-(ii)$

C. $A-(i), B-(iii), C-(iv), D-(ii)$

D. $A-(i), B-(iii), C-(ii), D-(iv)$

Answer: B

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14. Which of the following organisms is used in the production of beverages?

A. Penicillium notatum

B. Saccharomyces cerevisiae

C. Aspergillus niger

D. Clostridium butyricum

Answer: B

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15. Which of the following options contains the end products formed during anaerobic respiration in yeast?

A. H_2O, CO_2 and energy

B. H_2S, $C_6H_{12}O_6$ and energy

C. CO_2, C_2H_5OH and energy

D. H_2O and CO_2

Answer: C

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16. Wine and beer are produced directly by fermentation whereas brandy and whisky require both fermentation and distillation. This is because

A. fermentation is inhibited at the alcohol level of $10 - 18\,\%$

B. distillation prolong storage

C. distillation improves quality

D. distillation purifies the beherage

Answer: A

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17. The chemical substances produced by some microbes which can kill or tetrad the growth of other microbes are called

A. antiseptics

B. antacids

C. antibiotics

D. all of these

Answer: C

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18. Antibiotics are obtained from

A. bacteria

B. fungi

C. actinomycetes

D. all of these

Answer: D

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19. Which of the following antibiotics was extensively used to treat American soldiers wounded in World War II ?

A. Neomycin

B. Bacitracin

C. Chloroamphenicol

D. Penicillin

Answer: D

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20. Which of the following statements regarding antibiotics is not correct ?

(i) Antibiotics are the attenuated microorganisms which in small concentration can kill or retard the growth of other harmful microorganisms.

(ii) Penicillin was the first antibiotic discovered by Alexander Fleming (1928) while working on bacterium Staphylococcus aureus.

(iii) The full potential of penicillin as an effective antibiotic was established by Ernest chain and Howard Florey.

(iv) Fleming, Chain and Florey were awarded the Nobel Prize in 1945

A. (i) only

B. (ii) only

C. (ii) and (iv)

D. (i),(ii) and (v)

Answer: A

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21. Which of the following discases are treated by antibiotics ?

(i) Plague (ii) Diphtheria

(iii) Leprosy (iv) Whooping cough

A. (i), (ii) and (iii)

B. (i), (iii) and (iv)

C. (ii), (iii) and (iv)

D. (i),(ii), (iii) and (iv)

Answer: D

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22. Streptomycin is obtained from

A. Streptomyces griseus

B. S. cerevisiae

C. S. venezuelae

D. S.rimosus

Answer: A

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23. Which of the following antibiotics is not correctly matched with the source from which it is obtained ?

A.

Antibiotic	Source
Penicillin	Penicillium chrysogenum

B.

Antibiotic	Source
Bacitracin	Bacillus licheniformis

C.

Antibiotic	Source
Griseofulvin	Penicillium griseofulvum

D.

Antibiotic	Source
Streptomycin	Bacillus griseus

Answer: D

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24. Select the correct option to fill up the blanks.

(i) _____are used in detergent formulations and are helpful in removing oily stains from the laundry.

(ii) _____are ripened by growing Penicillium roqueforti on them.

(iii) _____are produced without distillation whereas,_____are produced by distillation of the fermented broth.

(iv) _____antibiotic was used to teat American soldiers wounded in world war II.

(v) _____is also called as Kusht rog.

A. (i) Lipases, (ii) Camembert cheese, (iii) Whisky and rum, wine and beer, (iv) Penicillin, (v) Leprosy

B. (i) Lipases, (ii) Roquefort cheese, (iii) Wine and beer, whisky and rum, (iv) Penicillin, (v) Leprosy

C. (i) Streptokinases, (ii) Roquefort cheese, (iii) Wine and beer, whisky and rum, (iv) Streptomycin, (v) Whooping cough

D. (i) Amylases, (ii) Swiss cheese, (iii) Whisky and rum, wine and beer, (iv) Penicllin, (v) Diphtheria

Answer: B

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25. _____produced by bacterium Streptococcus and modified by genetic engineering is used as a clot buster for removing clots from the blood vessels of patients who have undergone myocardial infarction leading to heart attack.

A. Lipase

B. Streptokinase

C. Cyclosporin A

D. Antibiotic streptomycin

Answer: B

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26. Enzyme which has the fibrinolytic effect is

A. protease

B. amylase

C. lipase

D. streptokinase

Answer: D

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27. Identify the blank spaces A,B,C and D in the following table and select the correct answer.

Type of microbe	Scientific name	Commercial product
Bacterium	A	Streptokinase
B	Aspergillus niger	Citric acid
Fungus	Trichonderma polysporum	C
Bacterium	D	Butyric acid

A. A-Streptococcus B-Fungus

C-Cyclosporin A D-Clostridium butylicum

B. A-Clostridium butlyclium B-Streptococcus

C-Fungus D-Cyclosporin A

C. A-Streptococcus B-Yeast

C-Cyclosporin A D-Lacyobacillus

D. A-Streptococcus B-Cyclosporin A

C-Strains D-Clostridium butylicum

Answer: A

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28. A drug used for patient A is obtained from the organism B. Identify A and B in the above statement and select the correct answer.

A. $\begin{matrix} A & B \\ \text{Swine flu} & \text{Monascus purpureus} \end{matrix}$

B.

A	B
AIDS	Pseudomonas denitrificas

C.

A	B
Heart	Penicillium chrysogenum

D.

A	B
Organ transplant	Trichoderma polysporum

Answer: D

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29. Stains used for lowering blood cholesterol level are extracted from

A. algae

B. bacteria

C. viruses

D. yeast

Answer: D

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30. Monascus purpureus is a yeast commerically used in the production of

A. citric acid

B. ethanol

C. blood cholesterol lowering statins

D. streptokinase for removing clots from blood vessels.

Answer: C

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31. Identify the blank spaces A,B,C and D in the table given below and select the correct answer.

type of microbe	Scientific name	Product	Medical applicati
Fungs	A	Cyclosporin A	B
C	Monascus purpuereus	Statin	D

A. A-Trichoderma polysproum,

B-As an immunosuppressive agent,

C-Yeast (Fungus),

D-Lowering of blood chloesterol

B. A-Trichoderma polysporum,

B-Lowering of blood cholesterol,

C-Yeast (Fungus),

D-As an immunospressive agent

C. A-Yeast (Fungus),B-Lowering of blood cholesterol,

C-Trichoderma polysporum,

D-As an immunosuppressive agent

D. A-Streptococcus,

B-As an immunosuppressive agent,

C-Bacterium, D-Lowering of blood cholesterol

Answer: A

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32. Identify the blanks spaces A,B,C and D in the following table and select the correct answer.

Type of microbe	Scientific name	Commercial product
Bacterium	A	Lactic acid
Fungus	B	Cyclosporin A
C	Monascus purpureus	Statins
Fungus	Penicillium notatum	D

A. A-Lactobacillus B-Trichoderma polysporum

C-Yeast D-Penicillin

B. A-Acetobacter B-Trichoderma polysporum

C-Yeast D-Streptomycin

C. A-Lactobacillus B-Aspergillus niger

C-Algae D-Penicillin

D. A-Lactobacillus B-Trichoderma polysporum

C-Agaricus D-Penicillin

Answer: A

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33. _____is the first step of sewage treatment.

A. Precipitation

B. Chlorination

C. Sedimentation

D. Aeration

Answer: C

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34. During the primary treatment of sewage, solid paricles that settle down are called

A. flocs

B. primary sludge

C. activated sludge

D. anaerobic sludge

Answer: B

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35. The purpose of biological treatment of waste water is to

A. reduce BOD

B. increase BOD

C. reduce sedimentation

D. increase sedimentation

Answer: A

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36. The masses of bacteria held together by slime and fungal filaments to form mesh-like structures are called as

A. primary sludge

B. floces

C. activated sludge

D. anaerobic sludge

Answer: B

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37. Read the following statements and select the correct option.

Statement 1 : BOP represents the amount of dissolved oxygen that would be consumed if all the organic matter in one litre of water were oxidised by microorganisms.

Statement 2 : High value of BOD indicates that water is highly polluted by organic matter.

A. Both statements 1 and 2 are correct

B. Statement 1 is correct but statement 2 is incorrect

C. Statement 1 is incorrect but statement 2 is correct

D. Both statements 1 and 2 are incorrect

Answer: A

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38. BOD is____in polluted water and _____in potable water.

A. more, less

B. less, more

C. less in both

D. medium in both

Answer: A

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39. Biochemical oxygeb demand (BOD) in a river water

A. has no relatiship with concentration of oxygen in the water

B. gives a measure of Salmonella in the water

C. increases when sewage gets mixed with river water

D. remains unchanged when algal bloom occurs.

Answer: C

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40. When domestic sewage mixes with river water

A. small animals like rats will die after drinking river water

B. the increased microbial activity releases micronutrients such as iron

C. the increased microbial activity uses up dissolved oxygen

D. the river water is still suitable for drinking as impurities are only about 0.1%.

Answer: C

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41. A sewage treatement process in which a part of decomposer bacteria present in the wasts is recycled into the starting of the process is called as

A. primary treatment

B. activated sludge treatment

C. tetriary treatment

D. none of these

Answer: B

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42. In the sewage treatment, bacterial flocs are allowed to sediment in a setting tank. This sediment is called as

A. inactivated sludge

B. activated sludge

C. primary sludge

D. secondary sluge

Answer: B

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43. Mach column I with column II and select the correct answer from the given codes.

Column I	Column II
A. The stage in which of physical treatment of sewage is done	(i) Anaerob
B. The stage in which biological treatment of sewage is done	(ii) Activat
C. Name of the sediment in primary treatment	(iii) Aerati
D. It is carried to aeration tanks from primary	(iv) Primar
E. Name of the sediment in secondary treatment	(v) Primary
F. site of flocs growth	(vi) seconda
G. Function of sludge digester	(vii) Prima

A.

$$A-(vii), B-(vi), c-(v), D-(iv), E-(ii), F-(iii), G-(i)$$

B.

$$A-(i), B-(iii), C-(v), D-(vii), E-(ii), F-(iv), G-(vi)$$

C.

$$A-(i), B-(ii), C-(iii), D-(iv), E-(v), F-(vi), G-(vii)$$

D.

$$A-(vii), B-(vi), C-(i), D-(ii), E-(iii), F-(iv), G-(v)$$

Answer: A

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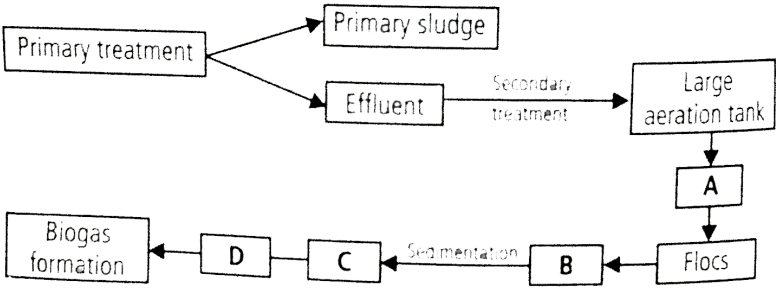
44. Given below is the flow chart of sewage treatement. Identify A,B,C and D and select the correct option.



A. A-Mechanical agitation, B-Increased BOD C-Activated sludge, D-Aerobic sludge digesters

B. A-Mechanical agitation, B-Reduced BOD C-Activated sludge, D-Anaerobic sludge digesters

C. A-Microbial digestion, B-Activated sludge C-Reduced BOD, D-Anaerobic sludge digesters

D. A-Microbial digestion, B-Mechaical agitation C-Reduced BOD, D-Aerobic sludge digesters

Answer: B

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45. Read the following statements and select the incorrect one.

A. Little decomposition occurs during the formation of primary sludge

B. Formation of primary sludge requires ample aeration

C. Activated sludge posses flocs of decomposer microbes

D. Formation of activated sludge required aeration

Answer: B

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46. Select the correct statement regarding activated sludge formed during secondary sewage treatment.

A. A small part of it is rapidly pumped back from sedimentation to aeration tank

B. It absorbs pathogenic bacteria present in waste water while sinking to the bottom of the settling tank

C. A major part of it is anaerobically digested

D. Both (a) and (c)

Answer: D

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47. Which of the following steps is taken by the Ministry of Enviornment and Forests to protect rivers from water pollution?

A. Ganga Action Plan

B. Narmada Action Plan

C. Yamuna Action Plan

D. Both (a) and (c)

Answer: D

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48. Mach column I with column II and select the correct answer from the given codes.

$Column I$	$Column II$
A. Methanogens	$(i) BOD$
B. Fermentors	(ii) Methane rich fuel gas
C. Organic waste in water	(iii) Production of methane
D. Biogas	(iv) Large vessels for growing microbes

A. $A-(ii), B-(iv), C-(iii), D-(i)$

B. $A-(iv), B-(iii), C-(ii), D-(i)$

C. $A-(ii), B-(i), C-(iv), D-(iii)$

D. $A-(iii), B-(iv), C-(i), D-(ii)$

Answer: D

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49. Study the following statements and select the incorrect ones.

(i) Physical removal of large and small particles through filtration and sedimentation is called primary sewage treatment.

(ii) Secondary sewage treatment is mainly a mechanical process.

(iii) Activated sludge sediment in a sewage treatment plant is a rich source of aeroic bacteria.

(iv) Biogas, commonly called as gobar gas, is pure methane.

A. (i) and (ii)

B. (ii) and (iv)

C. (ii) and (iii)

D. (iii) and (iv)

Answer: B

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50. Methanogens, growing anaerobically on cellulosic material produce

A. methane

B. methane and carbon dioxide

C. methane and hydrogen

D. methane, carbon dioxide and hydrogen

Answer: D

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51. Which of the following bacteris is present in the rumen of cattle?

A. Azotobacter

B. Rhizobium

C. Methanobacterium

D. Azospirillum

Answer: C

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52. Process of biogas production is

A. aerobic process

B. anaerobic process

C. active process

D. passive process

Answer: B

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53. Biogas is produced by

A. aerobic breakdown of biomass

B. anaerobic breakdown of biomass

C. with the help of methanogenic bacteria

D. both (b) and (c)

Answer: D

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54. Match column I with column II and select the correct option from the codes given below.

$ColumnI$	$ColumnII$
A. Statins	(i)Biogas
B. Dung	(ii)Saccharomyces cerevisae
C. Ethanol production	(iii)Monascus purpureus
D. CyclosporinA	(iv)Trichoderma polysporum

A. $A-(iii), B-(i), C-(iv), D-(iii)$

B. $A-(i), B-(iii), C-(iv), D-(ii)$

C. $A-(iii), B-(ii), C-(iv), D-(i)$

D. $A-(iii), B-(i), C-(ii), D-(iv)$

Answer: D

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55. These bacteria grow anaerobically on cellulosic material, produce large amount of methane along with CO_2 and H_2, and are collectively called as methanogens. Examples of such bacteria are

A. Methanobacterium

B. Methanobrevibacter

C. Methanococcus

D. all of these

Answer: D

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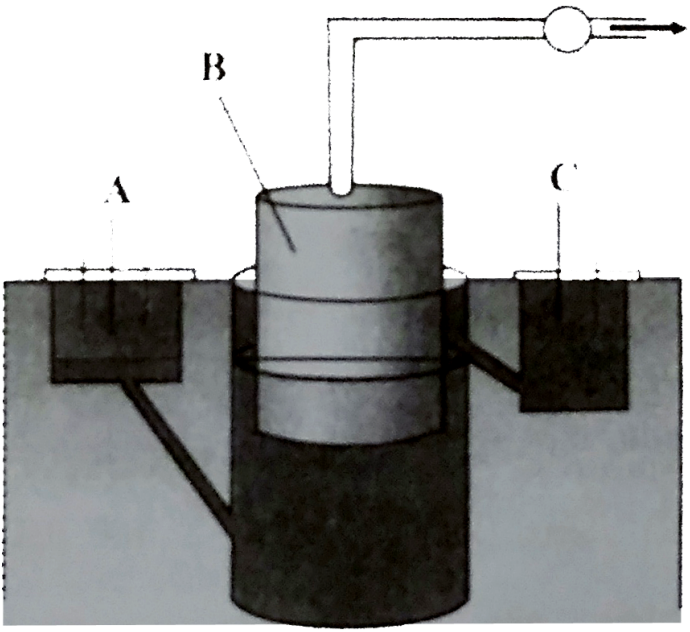
56. The given figure represents a typical biogas plant. Select the correct option for A,B and C respectively.



A. A is the inlet for cattle dung

B. C is the outlet for the release of biogas

C. B is the chamber which contains leftover slurry

D. All of these

Answer: A

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57. Which of the following statements is incorrect ?

A. Word antibiotic is a misnomer. Anti is a Greel word that means 'orgainst' and bios means 'life' together they mean against life (in the context of disease causing organisms), whereas with reference to human beings, they are pro-life and not agnist

B. Flocs are masses of bacteria with interwoven fungal filaments which form mesh-like structures.

C. Componenets of biogas are methane $(50 - 70\,\%)$, carbon dioxide $(30 - 40\,\%)$ and traces of hydrogen, nitrogen and H_2S

D. None of these

Answer: D

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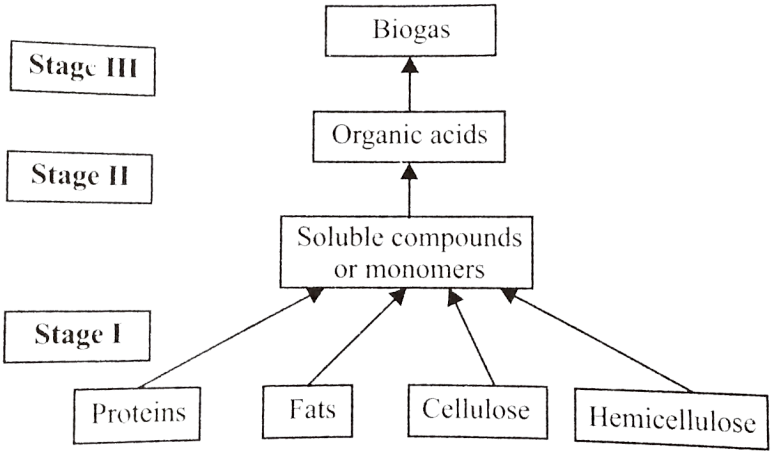
58. Biogas generation is a three stage anaerobic digestion of animal and other organic wastes. Study the following flow chart and select the correct option for stages I, II and III.



A. In stage -I, anaerobic microorganisms bring about enzymatic breakdown of complex organic compounds into simple soluble compounds or monomers

B. In stage -II, monomers are converted into organic acids by fermentation causing microbes

C. In stage-III, organic acids are acted upon by methanogenic bacteria to produce biogas

D. All of these

Answer: D

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59. Read the following statements and select the correct option.

Statement 1 : Biocontrol refers to the use of biological methods for controlling plant diseases and pests.

Statement 2 : Use of biocontrol measures will greatly reduce our dependence on toxic chemicals and pesticides.

A. Both statements 1 and 2 are correct

B. Statement 1 is correct but statement 2 is incorrect

C. Statement 1 is incorrect but statement 2 is correct

D. Both statements 1 and 2 are incorrect

Answer: A

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60. Biopesticides are

A. the chemicals which are used to destroy the pests

B. the living organisms or their prducts which are used for the pest control

C. the organisms which denstroy the crops

D. none of these

Answer: B

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61. When a natural predator (living organism) is applied on the other pathogen organisms to control them, this process is called as

A. biological control

B. genetic engineering

C. arifificial control

D. confusion technique

Answer: A

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62. Dragonflies are used to get rid of

A. mosquitoes

B. aphids

C. butterfly caterpillars

D. both (a) and (b)

Answer: A

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63. A microbial biocontrol agent that can be used to control butterfly caterpillars is

A. Trichoderma polysporum

B. Bacillus thuringiensis

C. Streptococcus

D. mycorrhiza

Answer: B

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64. Bacillus thuringiensis is used to control

A. bacterial pathogens

B. fungal pathogens

C. mematodes

D. insect pests

Answer: D

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65. Bacillus thuringiensis (Bt) strains have been used for designing novel

A. biofertilisers

B. bio-metallurgical techniques

C. bio-mineralisation process

D. bio-insecticidal plants

Answer: D

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66. Fill up the blanks by selecting the correct option.

(i) Biogas is a mixture of gases which predominantly contains_____and is used as_____

(ii) Methanogens are commonly found in the_____during sewage treatment.

(iii) _____species are free-living fungi and effective biocontrol agents of several plant pathogens.

A. (i) methane, fuel, (ii) anaerobic sludge, (iii) Trichoderma

B. (i) CO_2, fuel, (ii) primary sludge, (iii) Trichoderma

C. (i) mathane, fuel, (ii) anaerobic sludge, (iii) Baculoviruses

D. (i) methane, fuel, (ii) aerobic sludge, (iii) Trichoderma

Answer: A

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67. Which of the following statements is correct with regard to biocontrol agents ?

A. Ladybird and dragoniflies are used to get rid of aphids and mosquitoes respectively.

B. Bacillus thuringiensis bacteria are used to control butterfly caterpillars

C. Trichoderma species are used to control several plant pathogens

D. All of these

Answer: D

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68. Trichoderma harizianum has proved to be a useful microorganism for

A. gene transfer in higher plants

B. biological control of soil-borne plant pathogens

C. bioremediation of contaminated soils

D. reclamation of wastelands.

Answer: B

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69. Baculoviruses (Nucleopolyhedrobirus) do not show

A. host specificity

B. narrow spectrum applications

C. effects on non-target pathogens

D. utility in IPM programme

Answer: C

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70. Which of the following statements regarding baculoviruses as biocontrol agents is/are correct ?

A. The majority of baculovirus used as biocontrol agents are included in the genus-Nucleopolyhedrovirus

B. Infection with baculoviruses occurs when susceptible hosts (e.g., some specific insects) eat virus particle present on foliage and dies.

C. These are important in organic farming because of their specific action on harmful insects without causing and damage to beneficial insects as well as to the environment

D. All of these

Answer: D

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71. Integrated Pest Mangement (IPM) discourages the excessive use of

A. biological methods

B. chemical pesticides

C. mechanical methods

D. all of these

Answer: B

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72. Which of the following is not used as a biopesticide ?

A. Trichoderma harzianum

B. Nucleopolyhedrovirus

C. Xanthomonas campestris

D. Bacillus thuringiensis

Answer: C

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73. The reson that the chemical/synthetic fertilisers should be replaced by biofertilisers is that the former

A. are source of environmental pollution

B. are expensive

C. axaust the valuable energy resources for their manufacture

D. all of these

Answer: D

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74. Organic farming does not include

A. green manures

B. chemical fertilisers

C. farmyard manures

D. compost

Answer: B

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75. Organic farming includes

A. use of fertilisers and pesticides of biological origin

B. IPM (Integrated Pest Management)

C. locally developed pest resistance varieties

D. all of these

Answer: D

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76. Living organisms used to enrich the nutrient quality of the soil are called as

A. bicontrol agents

B. biofertillsers

C. synthetic fertilisers

D. natural ferilisers

Answer: B

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77. Biofertilisers are prganisms that enrich the nutrient quality of the soil.

Which of the following can be used as biofertilisers ?

A. Nitrogen fixing cyanobacteria

B. Nitrogen fixing bacteria

C. Mycorrhizae

D. All of these

Answer: D

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78. Biofertilisers are

A. some bacteria and cyanobacteria

B. fertilisers formed by ploughing in barseem

C. fertilisers obtained by decay of dead organisms

D. fertilisers prepared by mixing cattle dung with crop residues.

Answer: A

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79. Biofertilisers are the living orgaisms which

A. bring about soil nutrient enrichment

B. maximise the ecological benefits

C. minimise the environmental hazards

D. all of these

Answer: D

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80. Unicellular symbiotic organisms improve yield of legumes by

A. fixing atmospheric nitrogen without colonising roots of host plant

B. fixing atmospheric nitrogen and colonising roots of host plant

C. inducing the host plant to absorb more phosphours

D. stimulating the host plant to become tolerant to drought

Answer: B

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81. Match column I with column II and select the correct answer from the gives codes.

$Column I$	$Column II$
A. Trichoderma	(i)Free living nitrogen fixing bacteria
B. Streptomyces	(ii)Biocontrol agent
C. Azospirillum	(iii)Lactic acid
D. Lactobacillus	(iv)Source of antibiotic

A. $A-(ii), B-(iii), C-(iv), D-(i)$

B. $A-(ii), B-(iv), C-(i), D-(iii)$

C. $A-(iii), B-(i), C-(ii), D-(iv)$

D. $A-(iv), B-(ii), C-(i), D-(iii)$

Answer: B

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82. Which one of the following can be used as biofertiliser in cotton field?

A. Azolla-Anabaena

B. Streptococcus

C. Azospirillum

D. Azotobacter chroococcum

Answer: D

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83. The symbiotic association between fungi and roots of higher plants is referred to as

A. lichen

B. mycorrhiza

C. biofertiliser

D. biocontrol agent

Answer: B

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84. Which one of the following microorganisms forms symbiotic assocation with plants and helps them in their nutrition?

A. Glomus

B. Azotobacter

C. Klebsiella

D. Azospirillum

Answer: A

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85. Which of the following statements is not correct regarding mycorrhiza ?

A. It helps in absorption of phosphous from the soil.

B. It is a symbiotic assocaition of fungi with the roots of higher plants

C. It helps the plant in developing resistance to rootborne pathogens

D. None of these

Answer: D

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86. Which one of the following pairs is correctly matched?

A. Rhizobium - Parasite in the roots of leguminous plants

B. Mycorrhizae- Mineral uptake from soil

C. Yeast - Production of biogas

D. Azospirillum - Symbiotic N_2- fixing bacterium

Answer: B

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87. Match column I with column II and select the correct answer from the given codes.

$Column I$	$Column II$
A. Mycorrhizae	(i)Azadirachtin
B. Bacillus thuringiensis	(ii)Phosphours nutrition
C. Root nodules	(iii)Leghaemoglobin
D. Biopesticide	(iv)Bioinsecticide

A. $A-(iii), B-(i), C-(ii), D-(iv)$

B. $A-(ii), B-(iii), C-(iv), D-(i)$

C. $A-(ii), B-(iv), C-(iii), D-(i)$

D. $A-(iii), B-(iv), C-(ii), D-(i)$

Answer: C

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88. Cyanobacteria are

A. heterotrophs

B. chemotrophs

C. autotrophs

D. organotrophs

Answer: C

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89. A nitrogen fixing microbe associated with the fern Azolla in rice fields is

A. Frankia

B. Rhizobium

C. Spirunlina

D. Anabaena

Answer: D

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90. Azolla pinnata has been found to be an important biofertiliser for paddy crops. This quality is due to the presence of

A. N_2 fixing bacteria

B. N_2 fixing cyanobacteria

C. mycorrhizae

D. all of these

Answer: B

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91. Which of the following is widely used as a successful biofertiliser in Indian rice fields ?

A. Rhizobium

B. Acacia arabica

C. Acalypha indica

D. Azolla pinnata

Answer: D

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92. Study the following statements and select the correct ones

(i) Methanogens are archeabacteria which produce methane in marshy areas

(ii) Nostoc is a filamentous blue green alga which fixes atmospheric nitrogen.

(iii) Many membres of the genus Glomus form my corrhiza.

A. (i) and (ii)

B. (i) and (iii)

C. (ii) and (iii)

D. (i),(ii) and (iii)

Answer: D

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93. Which of the following statements is/are correct ?

A. In paddy fields, cyanobacteria serve as an important biofertiliser.

B. Vermicompost consists of organic metter prepared by the action of earthworms on human or animal waste.

C. The important examples of cyanobacteria as biofertilisers are Anabaena, Nostoc and Oscillatoria.

D. All of these

Answer: D

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94. Which of the following options includes biofertilisers ?

A. Cowdung manure and farmyard waste

B. A quick growing crop ploughed back into the field

C. Nostoc, Oscillatoria

D. All of these

Answer: C

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95. Which of the following is a non-symbiotic biofertiliser ?

A. VAM

B. Azotobacter

C. Anabaena

D. Rhizobium

Answer: B

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96. Nitrogen fixation in root nodules of Alnus is brought about by

A. Frankia

B. Azorhizobium

C. Bradyrhizobium

D. Clostridium

Answer: A

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97. Farmers have reported over 50% higher yields of rice by using which of the following biofertilisers ?

A. Bacillus thuringiensis

B. Lagume-Rhizobium symbiosis

C. Mycorrhizae

D. Azolla pinnata

Answer: D

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98. Match column I with column II and select the correct answer from the given codes.

$Column I$	$Column II$
A. Ganga action plan	(i) N_2 fixing cyanobacterium
B. Bt cotton	(ii) Ministry of environment and forests
C. Rhizobium	(iii) Insect resistant plant
D. Nostoc	(iv) N_2 fixing bacterium

A. $A-(ii), B-(iii), C-(iv), D-(i)$

B. $A-(iii), B-(i), C-(iv), D-(i)$

C. $A-(ii), B-(iv), C-(iii), D-(i)$

D. $A-(i), B-(iii), C-(ii), D-(iv)$

Answer: A

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99. Which of the followig statements is/are incorrect ?

(i) Cyanobacteria are autotrophic microbes widely distributed in aquatic and terrestrial habitats.

(ii) Anabaena, Nostoc and Oscillatoria are photosynthetic N_2-fixing cyanobacteria.

(iii) Tolypothrix (BGA) can increase rice production by about $20\ \%$

(iv) BGA add organic matter to the soil and increase its fertility.

(v) In our country, biofertilisers are not available commercially in the markets for farmers.

A. (v) only

B. (iv) only

C. (iii) only

D. None of these

Answer: A

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100. Match column I with column II and select the correct answer from the given codes.

$Column I$	$Column II$
A. Azolla	(i) symbiotic N_2 – fixer
B. Rotenone	(ii) Symbiotic association with N_2 – fixing
C. Crotolaria juncea	(iii) Natural insecticide
D. Frankia	(iv) Green manure

A. $A-(ii), B-(iii), C-(iv), D-(i)$

B. $A-(iii), B-(iv), C-(iii), D-(i)$

C. $A-(ii), B-(i), C-(iv), D-(iii)$

D. $A-(i), B-(iii), C-(iv), D-(ii)$

Answer: A

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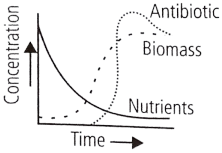
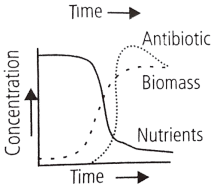
101. Which of the following curves correctly represents the process of antibiotic production by Streptomyces sp ?

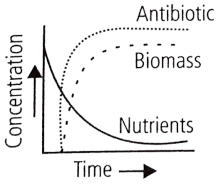
A.



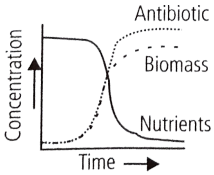
B.



C.



D.



Answer: D

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102. In a microbiology laboratory, the technician uses heat to sterilise the nutrient solution that is used to grow a fungus. When the heating system broke down, he sterilised the solution by passing it (in a sterile

environment) through a sterile filter with a pore size of 0.2 micrometers. when the fungs was grown on the filtered nutrient solution, it stopped growing and looked unhealthy within a few days. which statements is the most likely explanation for the observed effects on the fungus ?

A. The nutrient solution contained a virus.

B. Heating makes the glucose in the nutrient solution more digestible

C. Filering removed one of the larger nutrient molecules

D. The nutrient solution contained a bacterium that was pathogenic to the fungus.

Answer: A

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103. Study the given differences between primary sludge and activated sludge and select the incorrect ones.

Primary sludge	Act
(i)It is sludge formed during primary sewage treatment	It i
(ii)It possesses flocs of decomposer microbes	It d
(iii)It does not require aeration	For
(iv)A lot of decomposition occurs during formation of primary sludge	Ver

A. (i) and (ii)

B. (ii) and (iv)

C. (i),(ii) and (iv)

D. (ii) and (iii)

Answer: B

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104. Microbe used for biocontrol of pest bufferfly caterpillars is

A. Saccharomyces cerevuisiae

B. Bacillus thuringiensis

C. Streptococcus sp

D. Trichoderma sp

Answer: B

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105. In batch fermentation

A. substrates are added to the system all at once and runs until produce is harvested

B. nutrients are continuously fed into the reactor and the product is siphoned off during the run

C. new batches of microorganisms are screened for increase yield

D. small-scale production is used to synthesise product

Answer: A

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106. The vitamin whos content increases following the conversion of milk into curd by lactic acid bacteria is

A. vitamin C

B. vitamin D

C. vitamin B_{12}

D. vitamin E

Answer: C

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107. Wastewater treatment generates a large quantity of sludge, which can be treated by

A. anaerobic digesters

B. floc

C. chemicals

D. oxidation pond

Answer: A

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108. Methanogenic bacteria are not found in

A. rumen of cattle

B. gobar gas plant

C. bottom of water-logged paddy fields

D. activated sludge

Answer: D

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109. Match the following list of bacteria and their commercially important products.

Bacterium	Product
(i) Aspergillus niger	(A) Lactic acid
(ii) Acetobacter aceti	(B) Butyric acid
(iii) Clostridium butylicum	(C) Acetic acid
(iv) Lactobacillus	(D) Citric acid

Choose the correct match.

A. $i-(B), ii-(C), iii-(D), iv-(A)$

B. $i-(B), ii-(D), iii-(C), iv-(A)$

C. $i-(D), ii-(C), iii-(B), iv-(A)$

D. $i-(D), ii-(A), iii-(C), -iv-(B)$

Answer: C

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110. Match the following list of bioactive substances and their roles.

Bioactive substance	Role
(i)Statin	(A)Removal of oil stains
(ii)CyclosporinA	(B)Removal of clots from blood vessels
(iii)Streptokinase	(C)Lowering of blood cholesterol
(iv)Lipase	(D)Immuno-suppressive agent

Choose the correct match.

A. $i-(B), ii-(C), iii-(A), iv-(D)$

B. $i-(D), ii-(B), iii-(A), iv-(C)$

C. $i-(D), ii-(A), iii-(B), iv-(C)$

D. $i-(C), ii-(D), iii-(B), iv-(A)$

Answer: D

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111. The primary treatement of wastewater involves the removal of

A. dissolved impurities

B. stable particles

C. toxic substances

D. harmuf bacteria

Answer: B

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112. BOD of wastwater is estimated by measuring the amount of

A. total organic matter

B. biodegradable organic matter

C. oxygen evolution

D. oxygen consumption

Answer: D

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113. Which one of the following alcoholic drinks is produced without distillation ?

A. Wine

B. Whisky

C. Rum

D. Brandy

Answer: A

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114. The technology of biogas production from cow dung was developed in india largely due to the efforts of

A. Gas Autority of India

B. Oil and Natural Gas Commission

C. India Agricultural Research Institute and Khadi & Village Industries Commission

D. India Oil Corporation

Answer: C

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115. The free-living fungus Trichoderma can be used for

A. killing insects

B. biological control of plant diseases

C. controlling butterfly caterpillars

D. producing antibiotics

Answer: B

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116. What would happen if oxygen availability to activated sludge flocs is reduced ?

A. It will slow down the rate of degradation of organic matter

B. The center of flocs will becoms anoxic, which would cause death of bacteria and eventually breakage of flocs

C. Flocs would increase in size as anerobic bacteria would grow around flocs

D. Protozoa would grow in large numbers

Answer: A::B

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117. Mycorrhiza does not help the host plant in

A. enhancing its phosphorus uptake capacity

B. increasing its tolerance to drought

C. enhancing its resistance to root pathogens

D. increasing its resistance to insects

Answer: D

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118. Which one of the following is not a nitrogen-fixing organism ?

A. Anabaena

B. Nostoc

C. Azotobacter

D. Pseudomonas

Answer: D

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119. Big holes in Swiss cheese are made by a

A. a machine

B. a bacterium that produces methane gas

C. a bacterium producing a large amount of carbon dioxide

D. a fungus that releases a lot of gases during its metabolic activities

Answer: C

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120. The residue left after methane production from cattle dung is

A. burnt

B. burried in land fills

C. used as manure

D. used in civil construction

Answer: C

Watch Video Solution

121. Mathanogens do not produce

A. oxygen

B. methane

C. hydrogen sulphide

D. carbon dioxide

Answer: A

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122. Activated sludge should have the ability to settle quickly so that it can

A. be rapidly pumped back from sedimentation tank to aeration tank

B. absorb pathogenic bacteria present in watewater while sinking to the botton of the settling tank

C. be discarded and anaerobically digested

D. absorb colloidal organic matter

Answer: A

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123. Match the items in column 'A' and column 'B' and choose correct answer.

$Column A$	$Column B$
(i) Lady bird	(A) Methanobacterium
(ii) Mycorrhiza	(B) Trichoderma
(iii) Biological control	(C) Aphids
(iv) Biogas	(D) Glomus

The correct answer is

A. $(i) - B, (ii) - D, (iii) - (C), iv) - A$

B. $(i)-C,(ii)-D,(iii)-B,(iv)-A$

C. $(i)-D,(ii)-A,(iii)-B,(iv)-C$

D. $(i)-C,(ii)-B,(iii)-A,(iv)-D$

Answer: B

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124. Assertion : Nucleic acid complexes alone cannot cause diseases.

Reason : Only nucleoproteins can function as infectious agents.

A. If both assertion and reason are true and reason is the correct explanation of assertion

B. If both assertion and reason are true but reason is not the correct explanation of assertion

C. If assertion is true but reason is false

D. If both assertion and reason are false

Answer: D

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125. Assertion : Streptococcus thermophilus increases nitritional value of milk.

Reason : Curd and yoghurt have higher vitamin content than milk.

A. If both assertion and reason are true and reason is the correct explanation of assertion

B. If both assertion and reason are true but reason is not the correct explanation of assertion

C. If assertion is true but reason is false

D. If both assertion and reason are false

Answer: A

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126. Assertion : Toddy becomes unpalabtable after 24 hours.

Reason : The fermentation of toddy is continued by naturally occuring yeasts.

A. If both assertion and reason are true and reason is the correct explanation of assertion

B. If both assertion and reason are true but reason is not the correct explanation of assertion

C. If assertion is true but reason is false

D. If both assertion and reason are false

Answer: A

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127. Assertion : Beer and wine are called soft liquors while gin,rum, etc., are hard liquors.

Reason : Beer and wine are made without distillation.

A. If both assertion and reason are true and reason is the correct explanation of assertion

B. If both assertion and reason are true but reason is not the correct explanation of assertion

C. If assertion is true but reason is false

D. If both assertion and reason are false

Answer: B

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128. Assertion : Griseofulvin extracted from P.griseofulvum is used for ringworm treatment.

Reason : Trichopyton, Epidermophyton, etc., cannot grow well in presence of Penicillium griseofulvum.

A. If both assertion and reason are true and reason is the correct explanation of assertion

B. If both assertion and reason are true but reason is not the correct explanation of assertion

C. If assertion is true but reason is false

D. If both assertion and reason are false

Answer: A

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129. Assertion : Acetic acid production involves both aerobic and anaerobic processes.

Reason : Production of alcohol from glucose is an aerobic process and production of acetic acid from alcohol is an anerobic process

A. If both assertion and reason are true and reason is the correct explanation of assertion

B. If both assertion and reason are true but reason is not the correct explanation of assertion

C. If assertion is true but reason is false

D. If both assertion and reason are false

Answer: C

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130. Assertion : An organ transplant patient if not provided with cyclosporin A may reject the transplanted organ.

Reason : Cycosporin A inhibits activation of T-cells and interferes with destruction of non-sefl cells.

A. If both assertion and reason are true and reason is the correct explanation of assertion

B. If both assertion and reason are true but reason is not the correct explanation of assertion

C. If assertion is true but reason is false

D. If both assertion and reason are false

Answer: A

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131. Assertion : Rennet and fruit extract of Withania somnifera have antagonistic functions.

Reason : Rennet is obtained from calf's liver and is used for curding of milk.

A. If both assertion and reason are true and reason is the correct explanation of assertion

B. If both assertion and reason are true but reason is not the correct explanation of assertion

C. If assertion is true but reason is false

D. If both assertion and reason are false

Answer: D

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132. Assertion : Secondary treatement of sewage is also called biological treatment while primary treatment is called physical treatment.

Reason : Primary sewae treatment depends only upon sedimentation properies of materials present in sewage and filtration.

A. If both assertion and reason are true and reason is the correct explanation of assertion

B. If both assertion and reason are true but reason is not the correct explanation of assertion

C. If assertion is true but reason is false

D. If both assertion and reason are false

Answer: A

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133. Assertion : Energy value of biogas is lower than that of organic matter.

Reason : Biogas minimises the chances of spread of fecal pathogens.

A. If both assertion and reason are true and reason is the correct explanation of assertion

B. If both assertion and reason are true but reason is not the correct explanation of assertion

C. If assertion is true but reason is false

D. If both assertion and reason are false

Answer: B

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134. Assertion : Dragonflies can be used to decrease occurrence of diseases like malaria, dengue, etc.

Reason : Baculoviruses are effective in controlling may insects and other arthropods.

A. If both assertion and reason are true and reason is the correct explanation of assertion

B. If both assertion and reason are true but reason is not the correct explanation of assertion

C. If assertion is true but reason is false

D. If both assertion and reason are false

Answer: B

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135. Assertion : Integrated pest management (IPM) programme at the same time deals with conservation of insects and destruction of insects.

Reason : IPM programmes are specially used in dealing with ecologically sensitive areas.

A. If both assertion and reason are true and reason is the correct explanation of assertion

B. If both assertion and reason are true but reason is not the correct explanation of assertion

C. If assertion is true but reason is false

D. If both assertion and reason are false

Answer: B

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136. Assertion : Biofertilisers are preferred to chemical fertilisers.

Reason : Chemical fertilisers are generally more expensive and hazardous to environment.

A. If both assertion and reason are true and reason is the correct explanation of assertion

B. If both assertion and reason are true but reason is not the correct explanation of assertion

C. If assertion is true but reason is false

D. If both assertion and reason are false

Answer: A

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137. Assertion : Most orchid seedings cannot develop well in the absence of fungal mycellium.

Reason : Fingal mycelium increases efficiency of abosorption only

A. If both assertion and reason are true and reason is the correct explanation of assertion

B. If both assertion and reason are true but reason is not the correct explanation of assertion

C. If assertion is true but reason is false

D. If both assertion and reason are false

Answer: C

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138. Assertion : Nitrogenase enzyme gets inactivated in presence of oxygen yet N_2 fixation occurs in aerobic cells of legume nodules.

Reason : Laghaemoglobin allows presence of oxygen just sufficient for cellular respiration only.

A. If both assertion and reason are true and reason is the correct explanation of assertion

B. If both assertion and reason are true but reason is not the correct explanation of assertion

C. If assertion is true but reason is false

D. If both assertion and reason are false

Answer: A


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