

026/2016

Maximum : 100 marks

Time : 1 hour and 15 minutes

- The molarity of the solution containing 4 g of sodium hydroxide in one litre water is :
(A) 0.1 M (B) 1 M
(C) 0.5 M (D) 10 M
- In the reaction $\text{N}_2\text{O}_4(\text{g}) \rightleftharpoons 2 \text{NO}_2(\text{g})$, an increase in pressure :
(A) Terminate the reaction (B) Shifts the equilibrium to the left
(C) Does not change the equilibrium (D) Shifts the equilibrium to the right
- A colligative property depends on :
(A) The number of solvent particles in which the solute dissolves
(B) Mass of solute dissolved in the solvent
(C) Mass of solvent taken
(D) The number of solute particles dissolved in a given volume of the solvent
- On dilution, specific conductance of an electrolyte :
(A) Increases (B) Decreases
(C) Does not change (D) Increases and then decreases
- pH of a solution whose hydroxide ion concentration is 0.001 mole/litre will be :
(A) 3 (B) 11
(C) 12 (D) 2
- The conjugate acid-base pairs in the following reaction, $\text{HCl} + \text{NH}_3 \rightleftharpoons \text{NH}_4^+ + \text{Cl}^-$, are :
(A) HCl and Cl^- (B) NH_3 and Cl^-
(C) HCl and NH_3 (D) NH_4^+ and Cl^-
- The number of fundamental vibrations of methane are :
(A) 3 (B) 4
(C) 9 (D) 8

8. The symmetric vibrations of CO_2 are :
- | | |
|------------------------------|--------------------------------|
| (A) Raman active | (B) IR active |
| (C) Both Raman and IR active | (D) Both Raman and IR inactive |
9. An adsorbent used in column chromatography is :
- | | |
|-----------------------|-----------------------|
| (A) Sodium hydroxide | (B) Silicon dioxide |
| (C) Calcium hydroxide | (D) Aluminum chloride |
10. Which of the following is an extensive property?
- | | |
|-------------------|-----------------|
| (A) Pressure | (B) Temperature |
| (C) Concentration | (D) Heat |
11. pH of milk ranges from :
- | | |
|---------|---------|
| (A) 6-7 | (B) 5-6 |
| (C) 7-8 | (D) 3-4 |
12. The yellow colour of milk is mainly due to :
- | | |
|----------------|-------------------|
| (A) Casein | (B) Carotene |
| (C) Riboflavin | (D) Phospholipids |
13. The presence of starch in milk can be detected using :
- | | |
|---------------------|-------------------------------|
| (A) Bromine water | (B) Calcium chloride solution |
| (C) Iodine solution | (D) Hydrochloric acid |
14. An example for a synthetic food colour additive :
- | | |
|-------------|----------------|
| (A) Saffron | (B) Curcumin |
| (C) Caramel | (D) Tartrazine |
15. The titrable acidity of milk can be expressed in terms of :
- | | |
|-----------------|-------------------|
| (A) Citric acid | (B) Malic acid |
| (C) Lactic acid | (D) Tartaric acid |
16. An example of a class II preservative is :
- | | |
|-------------|------------------|
| (A) Honey | (B) Acetic acid |
| (C) Glucose | (D) Benzoic acid |

17. The presence of tin in the food sample can be detected using :
- (A) Spectrophotometric Catechol violet method
 - (B) Colorimetric Carbamate method
 - (C) Colorimetric molybdenum blue method
 - (D) Colorimetric Silver diethyl dithiocarbamate method
18. An example for an artificial sweetener :
- (A) Sucrose
 - (B) Polyphenols
 - (C) Cyclamate
 - (D) Fructose
19. Fat percent of toned milk in Kerala :
- (A) 3.5
 - (B) 4
 - (C) 4.5
 - (D) 3
20. The test for checking the efficiency of pasteurization of milk :
- (A) Alkaline phosphatase test
 - (B) Gerbers test
 - (C) CLR test
 - (D) Mohrs method
21. The sweetest sugar among the following is :
- (A) Glucose
 - (B) Mannose
 - (C) Galactose
 - (D) Fructose
22. First enzyme to be isolated in pure crystalline form was :
- (A) Zymase
 - (B) Invertase
 - (C) Urease
 - (D) Lactase
23. Hexokinase enzyme belongs to the class :
- (A) Oxido-reductase
 - (B) Transferase
 - (C) Ligase
 - (D) Hydrolase
24. Which of the following is NOT a homopolysaccharide?
- (A) Pectin
 - (B) Chitin
 - (C) Inulin
 - (D) Cellulose
25. Caesin of milk is a :
- (A) Glycoprotein
 - (B) Phosphoprotein
 - (C) Metalloprotein
 - (D) Lipoprotein

26. Which of the following amino acid does not show optical activity?
- (A) Proline (B) Histidine
(C) Valine (D) Glycine
27. Palmitic acid is :
- (A) Monoenoic fatty acid (B) Polyenoic fatty acid
(C) Unsaturated fatty acid (D) Saturated fatty acid
28. Proteins absorbs UV radiation maximum at 280 nm due to the presence of :
- (A) Tryptophan (B) Tyrosine
(C) Phenyl alanine (D) All of the above
29. Two proteins have same molecular weight and same isoelectric point. The best way to resolve them will be by :
- (A) Ion Exchange Chromatography (B) Gel Filtration Chromatography
(C) Reverse Phase Chromatography (D) Chromatofocussing
30. Dietary fat :
- (A) is usually present, although there is no specific need for it
(B) if present in excess, can be stored as either glycogen or adipose tissue triacylglycerol
(C) should include linoleic and linolenic acids
(D) should increase on an endurance training program in order to increase the body's energy stores
31. The effects of vitamin A may include all of the following EXCEPT :
- (A) Prevention of anemia (B) Serving as an antioxidant
(C) Cell differentiation (D) The visual cycle
32. All the following compounds are Intermediate of the citric acid cycle except :
- (A) Isocitrate (B) Malate
(C) Pyruvate (D) Succinate
33. Which of the following would probably not be affected when a protein is denatured?
- (A) Primary structure (B) Secondary structure
(C) Hydrogen bonds (D) Tertiary structure

34. The general name for an enzyme that transfers phosphate groups from ATP to a Protein is :
- (A) Protein kinase (B) Phosphorylase
(C) Phosphatase (D) ATPase
35. A technique commonly used for the assay of hormones is :
- (A) Gel filtration (B) GLC
(C) Radioimmunoassay (D) HPLC
36. Iodine number is an indication of :
- (A) Chain length (B) Degree of unsaturation
(C) Rancidity (D) Specific gravity
37. Ninhydrin reacts with proline to give :
- (A) Purple colour (B) Green colour
(C) Yellow colour (D) Red colour
38. Conversion of two phosphoglycerate to phosphoenol pyruvate by the enzyme enolase is :
- (A) Decarboxylation (B) Dehydration
(C) Phosphorelation (D) Dehydrogenation
39. Which is the active form of an enzyme?
- (A) Holoenzyme (B) Apoenzyme
(C) Co-enzyme (D) Zymogen
40. The following are the examples for C_{18} fatty acids EXCEPT :
- (A) Oleic acid (B) Palmmitic acid
(C) Stearic acid (D) Linoleic acid
41. The biological indicator used for testing the efficiency of autoclave sterilization is :
- (A) *Geobacillus stearothermophilus* (B) *Bacillus anthracis*
(C) *Bacillus megatarium* (D) *Clostridium botulinum*
42. Amphitrichous bacteria possess :
- (A) One flagellum at one end
(B) Single flagellum at each pole
(C) A cluster of flagella at one end
(D) Uniformly distributed flagella over the whole cell surface

43. Which of the following is the largest animal virus?
(A) Rabies virus (B) HIV
(C) Pox virus (D) Herpes virus
44. The first direct demonstration of role of bacteria in causing human diseases came from the studies of :
(A) Robert Koch (B) Louis Pasteur
(C) Joseph Lister (D) Edward Jenner
45. Which of the following microscopes can be used for observation of living cells?
(A) Bright field Microscope
(B) Dark field Microscope
(C) Phase Contrast Microscope
(D) All of the above
46. Which type of culture media is supplemented with special nutrients for supporting the growth of fastidious microbes?
(A) Enrichment media (B) Enriched media
(C) Selective media (D) Differential media
47. Which of the following is a classic model of cellular slime molds?
(A) Dictyostelium (B) Myxogastria
(C) Physarium (D) Hemitrichia
48. Which of the following is an acidic dye used in simple staining?
(A) Methylene blue (B) Basic fuchsin
(C) Crystal violet (D) Eosin
49. In negative staining of tissue specimen for transmission electron microscopy, the specimen is spread with a thin film of :
(A) Mercuric chloride (B) Platinum
(C) Phosphotungstic acid (D) Liquid epoxy plastic
50. Bacterial cell membrane contain steroid like molecules called :
(A) Cholesterol (B) Hopanoids
(C) Terpenoids (D) Glycerol

51. Molds and yeasts which causes food spoilage prefers :
- (A) Alkaline pH (B) Neutral pH
(C) Acidic pH (D) None of the above
52. Which of the following selective medium is used for isolation of coliforms in the confirmed test of water quality analysis?
- (A) Mac Conkey Agar (B) Potato Dextrose Agar
(C) Mannitol Salt Agar (D) Eosin Methylene Blue Agar
53. The most common causative agent of food borne diseases in humans is :
- (A) *Clostridium perfringens* (B) *Clostridium botulinum*
(C) *Staphylococcus aureus* (D) *Campylobacter jejuni*
54. Which fungi produces aflatoxins, known to be powerful carcinogens?
- (A) *Aspergillus flavus* (B) *Claviceps purpurea*
(C) *Rhizopus stolonifer* (D) *Penicillium notatum*
55. Which of the following is a mold ripened cheese?
- (A) Swiss cheese (B) Cottage cheese
(C) Mozzarella (D) Blue cheese
56. A halophile would be a microorganism that prefers :
- (A) Increased amount of acid (B) Increased amount of oxygen
(C) Increased amount of salt (D) Increased amount of pressure
57. The major biological indicator of faecal pollution is :
- (A) *Escherichia coli* (B) *Streptococcus faecalis*
(C) *Thiobacillus ferrooxidans* (D) *Clostridium perfringens*
58. The time-temperature combination of HTST pasteurization of 71°C for 15 sec is selected on the basis of :
- (A) *Escherichia coli* (B) *Bacillus subtilis*
(C) *Clostridium botulinum* (D) *Coxiella burnetti*
59. Which of the following organism produces nisin, a bacteriocin currently used for the preservation of low acid canned foods?
- (A) *Enterococcus faecalis* (B) *Lactococcus lactis*
(C) *Lactobacillus acidophilus* (D) *Streptococcus lactis*

60. In which of the following fungal division comes the common bread mold, *Rhizopus stolonifer*?
- (A) Ascomycota (B) Zygomycota
(C) Basidiomycota (D) Deuteromycota
61. Use of living microorganisms to degrade environmental pollutants is called :
- (A) Micro remediation
(B) Nano remediation
(C) Bio remediation
(D) All of these
62. Introduction of DNA in to cells exposing to high voltage electric pulse is called :
- (A) Electrofusion (B) Electrofision
(C) Electrolysis (D) Electroporation
63. The PCR a technique was developed by :
- (A) Kary Mullis (B) Kobler
(C) Milstein (D) Altman
64. Interferons are :
- (A) Antibacterial Proteins (B) Antiviral Proteins
(C) Bacteriostatic Proteins (D) All of these
65. The first successfully cloned animal was :
- (A) Monkey (B) Gibbon
(C) Sheep (D) Rabbit
66. In *E coli*, which enzyme synthesizes the RNA primer for okazaki fragments :
- (A) DNA A (B) DNA C
(C) DNA G (D) All of these
67. Transcription is the transfer of genetic information from :
- (A) DNA to mRNA (B) tRNA to mRNA
(C) tRNA to DNA (D) none
68. *Chlorella* species are widely used in the removal of :
- (A) Organic wastes (B) Hydrocarbons
(C) Heavy metals (D) All of these

69. Western blotting is the technique for the detection of :
- (A) Specific DNA in a sample (B) Specific RNA in a sample
(C) Specific protein in a sample (D) Specific glycolipid in a sample
70. In which of the following separation method where proteins are separated on the basis of their net charge?
- (A) Affinity chromatography (B) Ion Exchange Chromatography
(C) Dialysis (D) Gel Filtration Chromatography
71. Ti plasmid, that is used in plant vector is obtained from :
- (A) Agrobacterium tumifaciens (B) Agrobacterium rhizogenes
(C) Agrobacterium radiobactor (D) Thermus aquaticus
72. Which of the following reagents are used for precipitating DNA?
- (A) Isopropanol (B) Ethanol
(C) Both (A) and (B) (D) None of these
73. Probiotics are :
- (A) Cancer inducing microbes (B) Safe antibiotics
(C) New kind of food allergens (D) Live microbial food supplement
74. The first vaccine produced from animal cell culture was :
- (A) Hepatitis B vaccine (B) Influenza vaccine
(C) Small pox vaccine (D) Polio vaccine
75. A group of genetically similar organisms obtained by a sexual reproduction is called :
- (A) Clone (B) Population
(C) Assembly (D) None
76. RFLP is :
- (A) Restriction Fragment Length Polymorphism
(B) Repeated Fragment Length Polymorphism
(C) Renewed Fragment Length Polymorphism
(D) Required Fragment Length Polymorphism

77. Proof reading activity to maintain the fidelity of DNA synthesis :
- (A) Occurs after the synthesis has been completed
 - (B) Is a function of the 3'-5' exonuclease activity of the DNA polymerases
 - (C) Requires the presence of an enzyme separate from the DNA polymerases
 - (D) Occurs in prokaryotes but not eukaryotes
78. Transgenic Organisms are :
- (A) Produced by gene transfer technology
 - (B) Extinct Organisms
 - (C) Naturally occurring and endemic
 - (D) Produced by traditional plant breeding technique
79. ECORI is a :
- (A) DNA Ligase Enzyme
 - (B) Restriction Endonuclease
 - (C) A vector used for insulin synthesis
 - (D) A plasmid used as a vector
80. Monoclonal antibodies are usually produced from :
- (A) Myeloma cells
 - (B) Hybridoma cells
 - (C) Monocytes
 - (D) Adipocytes
81. The Indian Constitution was amended for the first time in :
- (A) 1950
 - (B) 1951
 - (C) 1952
 - (D) 1953
82. The Constitution of India has borrowed, Fundamental Duties, from which of these Countries' Constitution?
- (A) USA
 - (B) Canada
 - (C) USSR
 - (D) UK
83. Who acted as the Chairman of the Drafting Committee of the Constituent Assembly?
- (A) B.C. Rajagopalachari
 - (B) B.R. Ambedkar
 - (C) Rajendra Prasad
 - (D) Jawaharlal Nehru

84. When did Right to Information Act come into force?
 (A) 2005 (B) 2003
 (C) 2004 (D) 2006
85. Who became India's first woman judge at the Kerala High Court in 1959?
 (A) Arya Pallam (B) Akkama Cheriyan
 (C) Anna Chandy (D) Lalitha Prabu
86. Antharjana Samaajams were organised under the leadership of :
 (A) Akkama Cheriyan (B) Lalitha Prabu
 (C) Kuttimalu Amma (D) Arya Pallam
87. Which is the only Union Territory to have a High Court of its own?
 (A) Chandigarh (B) Lakshadweep
 (C) Delhi (D) Daman and Diu
88. Kerala Sangeetha Nataka Academy is located in :
 (A) Ernakulam (B) Kottayam
 (C) Thrissur (D) Kozhikode
89. The news paper started by Herman Gundert :
 (A) Pashchimodayam (B) Rajyasamacharam
 (C) Malayalarajyam (D) Keralapazhama
90. The missionary who established the first printing press at Kottayam in 1821 :
 (A) Joseph Fenn (B) Thomas Norton
 (C) Henry Baker (D) Benjamin Bailey
91. 'Savarna Jatha' to support Vaikom Satyagraha was organized by :
 (A) K. Kelappan (B) Thycad Ayya
 (C) Mannathu Padmanaban (D) G.P. Pillai
92. 'Vivekodayam' magazine was published by :
 (A) Ramakrishna Pilla (B) V.T. Bhattathirippadu
 (C) Ayyankali (D) Kumaranasan

93. The agitation known as Nivarthana movement was started as a protest against the constitutional reforms of :
- (A) 1932 (B) 1919
(C) 1909 (D) 1947
94. Who was the founder of Prathyaksha Raksha Daiva Sabha?
- (A) Ayyankali (B) Poykayil Kumara Guru Devan
(C) Sahodaran Ayyappan (D) Vaghbadananda
95. 'Pattini Jatha' was led by :
- (A) A.K. Gopalan (B) Sree Narayana Guru
(C) V.T. Bhattathirippadu (D) Ayyankali
96. Which novel of Thakazhi Sivasankara Pillai got Kendra Sahithya Academy Award in 1958?
- (A) Enippadikal (B) Anubhavangal Palichakal
(C) Chemmeen (D) Ouseppinte Makkal
97. Who is known as 'Kerala Vyasa'?
- (A) Kunjikuttan Thampuran (B) Vallathol Narayana Menon
(C) Kumaranasan (D) G. Sankara Kurup
98. Which country adopted its first democratically framed constitution on 20th September 2015?
- (A) Bangladesh (B) Myanmar
(C) Bhutan (D) Nepal
99. International day of peace :
- (A) September 11 (B) September 21
(C) September 24 (D) September 6
100. Which state received the tourism award of 2013-14 for most innovative use of Information technology?
- (A) Gujarat (B) Madhya Pradesh
(C) Kerala (D) Assam