60111

ROLL No.

QN. BOOKLET No. 041

TEST FOR POST GRADUATE PROGRAMMES

BIOTECHNOLOGY

Time: 2 Hours | Maximum Marks: 450

INSTRUCTIONS TO CANDIDATES

1. You are provided with a Question Booklet and an Optical Mark Reader (OMR) Answer Sheet to mark your responses. Do not soil your OMR Sheet. Read carefully all the instructions given on the OMR Sheet.
2. Write your Roll Number in the space provided on the top of **this page**.
3. Also write your Roll Number, Test Code, Test Centre Code, Test Centre Name, Test Subject and the date and time of the examination in the columns provided for the same on the **Answer Sheet**. Darken the appropriate bubbles with HB pencil.
4. The paper consists of 150 objective type questions. All questions carry equal marks.
5. Each Question has four alternative responses marked **A, B, C** and **D** and you have to **darken** the bubble fully by **HB pencil** corresponding to the correct response as indicated in the example shown on the Answer Sheet. Also write the alphabet of your response with ball pen in the starred column against attempted questions and put an '×' mark by ball pen in the starred column against unattempted questions as given in the example in the OMR Sheet.
6. Each correct answer carries 3 marks and each wrong answer carries 1 minus mark.
7. Please do your rough work only on the space provided for it at the end of this question booklet.
8. You should return the Answer Sheet to the Invigilator before you leave the examination hall. However Question Booklet may be retained with the Candidate.
9. Every precaution has been taken to avoid errors in the Question Booklet. In the event of such unforeseen happenings, suitable remedial measures will be taken at the time of evaluation.
10. Please feel comfortable and relaxed. You can do better in this test in a tension-free disposition.

SEAL

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60111

BIOTECHNOLOGY

1. One of the following terms does not indicate the introduction of exogenous DNA into a cell

   (A) transformation
   (B) transfection
   (C) transfusion
   (D) transduction

2. All of the following processes occur in the mitochondria except

   (A) DNA synthesis
   (B) protein synthesis
   (C) fatty acid biosynthesis
   (D) β-oxidation of fatty acid

3. *Eco* RI is a

   (A) restriction endocuclease
   (B) exonuclease
   (C) gyrase
   (D) lipase

4. *p*BR322 is a

   (A) cosmid
   (B) plasmid
   (C) phagemid
   (D) pyramid

5. Early pregnancy detection test detects the presence of which of the following hormones?

   (A) Human Chorionic Gonadotropin
   (B) Leutinizing hormone
   (C) Follicle stimulating hormone
   (D) Estrogen

6. Dendrogram is constructed by using

   (A) Excel
   (B) Phylib
   (C) Pascal
   (D) Swiss port

7. Which of the following statements means that glucose and mannose are epimers?

   (A) One is ketose and the other is aldose
   (B) One is pyrannose and the other is furanose
   (C) They differ in configuration by about one atom
   (D) They are mirror-image of each other

8. Which of the following does not make direct use of proton motive force?

(A) Bacterial flagella
(B) Mitochondria
(C) Chloroplast
(D) Protozoan cilium

9. Heat shock proteins are originally described as proteins formed under stress. Now they are also known that they

(A) act as molecular chaperons and help in protein-folding
(B) degrade ubiquitin tagged proteins
(C) are protein-tyrosine kinases
(D) are GTPase activating proteins

10. The largest immunoglobulin of 900 kDa belongs to

(A) IgA
(B) IgD
(C) IgG
(D) IgE

11. Termination codon Amber is

(A) UAG
(B) UGA
(C) UAA
(D) UCA

12. The protein sequence CRYWP is

(A) Cys-Arg-Tyr-Trp-Phe
(B) Ala-Arg-Tyr-Trp-Pro
(C) Cys-Arg-Tyr-Trp-Pro
(D) Cys-Lys-Tyr-Trp-Pro

13. At which of the following stages a cell is at 4N condition?

(A) Prophase
(B) Anaphase
(C) Interphase
(D) Metaphase

14. During cytokinesis in plant cells, the cell plate is formed by the fusion of vesicles derived from which of the following?

(A) Microtubules
(B) Golgi complex
(C) Plasma membrane
(D) Cell wall

15. Which of the following is most likely to be the mechanism for the evolution of multigene families?

(A) Endosymbiosis
(B) Gene duplication
(C) Horizontal gene transfer
(D) Vertical gene transfer

16. Which of the following exists as zwitterion in aqueous solutions at neutral pH?

(A) NaCl
(B) Valine
(C) Cholesterol
(D) Glucose

17. Which of the following is the site of histone mRNA synthesis?

(A) Euchromatin
(B) Heterochromatin
(C) Nucleolus
(D) Nuclear envelope

18. Which of the following is present in prokaryotes?

(A) RNA Pol I
(B) RNA Pol II
(C) RNA Pol III
(D) RNA Pol

19. Anthrax is caused by

(A) Virus
(B) Bacteria
(C) Protozoa
(D) Helminthes

20. Enzymatic synthesis of deoxyribose nucleic acid was shown for the first time by

(A) Kornberg
(B) F. Sanger
(C) F. Crick
(D) J. Lederberg

21. DNA Polymerase I was cleaved into large Klenow and small subunit by which of the following proteolytic enzyme

(A) Trypsin
(B) Chymotrypsin
(C) Pepsin
(D) Subtilisin

22. Transposons were first discovered in

(A) *Zea mays*
(B) *Drosophila melanogaster*
(C) *C. elegans*
(D) *Mus Musculus*

23. Calvin cycle (C3 cycle) of carbon fixation was discovered in which of the following organism?

(A) *Nostoc*
(B) *Chlorella*
(C) *Spirogyra*
(D) *Zygnema*

24. Scrapies disease of sheep and goats is caused by

(A) Virus
(B) Bacteria
(C) Prions
(D) Protozoa

25. The recent National Science Congress was held in

(A) Agra
(B) Chennai
(C) Mumbai
(D) Chandigarh

26. In sickle cell anemia, which of the following hemoglobin subunit is affected?

(A) Alpha subunit
(B) Beta subunit
(C) Zeta subunit
(D) Gamma subunit

27. Which of the following group of antibodies can cross placenta?

(A) IgM
(B) IgG
(C) IgD
(D) IgA

28. The first rDNA product is

(A) Somatostatin
(B) Somatin
(C) Statin
(D) Humalin

29. Diphtheria toxin is an exotoxin produced by

(A) *Streptococcus sp.*
(B) *Corynebacterium sp.*
(C) *Clostridium sp.*
(D) *Staphylococcus sp.*

30. Bt Cotton carries the gene from

(A) *B. subtilis*
(B) *B. thuringensis*
(C) *Bacteroids*
(D) *Bombyx mori*

31. Immunoglobulins are made up of

(A) lipoproteins
(B) phopholipids
(C) nucleoproteins
(D) glycoproteins

32. The primary lymphoid organs are

(A) thymus, liver
(B) liver, bone marrow
(C) bone marrow, spleen
(D) thymus, bone marrow

33. Antigen binding is due to

(A) shape of the antigen
(B) antibody specificity
(C) antibody structure
(D) None of the above

34. Enzyme alcohol dehydrogenase belongs to the class

(A) Oxidoreductase
(B) Transferase
(C) Hydrolases
(D) Lyases

35. The enzymes which do not obey Michaleis-Menten kinetics such as aspartate transcarbamoylase are called

(A) allosteric enzymes
(B) stereo enzymes
(C) carboxylases
(D) amylases

36. Abzymes are catalytic

(A) antigens
(B) proteases
(C) antibodies
(D) hydrolases

37. Dry seeds can endure higher temperature than the soaked germinating seeds because

(A) hydration makes the enzymes sensitivity to temperature
(B) dry seeds have more reserve food
(C) seedlings are tender
(D) dry seeds are harder

38. The monomeric unit of chitin is

(A) glucose
(B) fructose
(C) galactose
(D) N-acetyl glucosamine

39. The double bonds of all naturally occurring unsaturated fatty acids are in the

(A) *cis*-configuration
(B) *trans*-configuration
(C) D-configuration
(D) L-configuration

40. The yeast carries

(A) Col E1
(B) pBR32S
(C) 2 μM plasmid
(D) YAC

41. Oxidative conversion of many amino acids to their corresponding α-keto acids occurs in mammalian

(A) intestine
(B) pancreas
(C) adipose tissue
(D) liver and kidney

42. Which of the following is an epimer of glucose?

(A) Ribose
(B) Fructose
(C) Cellulose
(D) Galactose

43. The end product of glycolysis in skeletal muscles is

(A) lactate
(B) pyruvate
(C) α-ketoglutarate
(D) succinate

44. Insulin is given in the form of

(A) protamine zinc insulin
(B) insulin in water
(C) insulin in alcohol
(D) insulin in tissue fluid

45. DNA fingerprinting has proved useful in forensic science. It involves the use of

(A) minisatellites
(B) rRNA
(C) cDNA
(D) bacterial DNA

46. The buffering capacity of a buffer will be maximum when its pH is

(A) lower to the pKa value
(B) higher to the pKa value
(C) very close to the pKa value
(D) independent of its pKa value

47. The hormone α-ecdysone is present in

(A) insects and nematodes
(B) insects and crustaceans
(C) annelida and nematodes
(D) insects and annelida

48. Darwin's finches are

(A) a variety of small birds found in Galapagos Island
(B) a variety of small birds found in Australia
(C) the fossils of small birds excavated by Darwin
(D) None of the above

49. The oil-eating superbug is

(A) pseudomonas
(B) proteous
(C) penicillium
(D) phosphobacteria

50. The segment of DNA which participates in crossing over is

(A) recon
(B) muton
(C) cistron
(D) replicon

51. Ti plasmid occurs in

(A) *Agrobacterium rhizogenes*
(B) *Aspergillus niger*
(C) *Agrobacterium tumifaciens*
(D) *Aspergillus oryzae*

52. Assimilatory power refers to

(A) reduction of CO_2
(B) production of ATP and $NADPH_2$
(C) oxidation of water
(D) hydrolysis of water

53. The following technique is widely used in molecular taxonomy

(A) 165 rRNA sequencing
(B) DNA sequencing
(C) protein sequencing
(D) finger printing

54. S-adenosyl methionine donates its methyl group in the synthesis of

(A) creatine
(B) choline
(C) melatonin
(D) All of the above

55. A protease which coagulates milk protein and has been used by cheese makers is

(A) rennin
(B) amylase
(C) catalase
(D) None of the above

56. Which of the following chromosomal rearrangements would you expect to have the least phenotypic effect on the organism?

(A) A paracentric inversion
(B) A paracentric duplication
(C) A deficiency
(D) A duplication

57. The CAG repeats in the Huntington Disease gene encodes

(A) a signal to methylate the promoter
(B) a signal to alter patterns of splicing
(C) a polyglutamine repeat
(D) an RNA protein binding segment

58. Exon skipping is associated with

(A) nonsense mutations
(B) regulatory mutations
(C) RNA processing mutations
(D) silent mutations

59. Which of the following is not a tumor suppressor gene?

(A) APC
(B) NFI
(C) RET
(D) RBI

60. Which of the following is the cause of sickle cell anemia?

(A) A deletion of the beta globin gene promoter
(B) The increased production of the alpha globin gene due to duplication
(C) A nonsense mutation in the coding region of the beta-globin gene
(D) A missense mutation in the coding region of the beta-globin gene

61. Most cell membranes are composed principally of

(A) DNA and ATP
(B) proteins and lipids
(C) chitin and starch
(D) nucleotides and amino acids

62. Which structure is usually present only in animal cells?

(A) Vacuole
(B) Cell wall
(C) Nucleus
(D) Centriole

63. During osmosis, the net flow of water molecules into or out of the cell depends upon the differences in the

(A) concentration of water molecules inside and outside the cell
(B) concentration of enzymes on either side of the cell membrane
(C) rate of molecular motion on either side of the cell membrane
(D) rate of movement of insoluble molecules inside the cell

64. Sodium ions are "pumped" from a region of lower concentration to a region of higher concentration in the nerve cells of humans. This process is an example of

(A) diffusion
(B) passive transport
(C) osmosis
(D) active transport

65. Which substances are secreted at the endings of nerve cells?

(A) Antibodies
(B) Antigens
(C) Neurotransmitters
(D) Lipids

66. For active transport to occur, the following must be present:

(A) Carrier proteins, ATP, cell membrane
(B) ATP, cell membrane, vacuole
(C) Carrier proteins, ADP, cell membrane
(D) Cell membrane, water, ATP

67. Which of the following is a haploid?

(A) Ovum
(B) Embryo
(C) Red blood cell
(D) Skin

68. If the eyepiece lens magnifies 10 times, what objective lens will give X400 magnification?

(A) X0.4
(B) X4
(C) X40
(D) X400

69. Which one of the following statements is true?

(A) DNA polymerase III is the main enzyme in eukaryotic transcription
(B) DNA polymerase I is the main enzyme in eukaryotic transcription
(C) DNA polymerase III is the main enzyme in prokaryotic replication
(D) DNA polymerase I is the main enzyme in prokaryotic replication

70. Which two features are characteristic of red blood cells?

(A) Large nucleus, red color
(B) Small nucleus, biconcave shape
(C) No nucleus, biconcave shape
(D) No nucleus, flat shape

71. Identify the non-degenerate amino acid among the following

(A) Alanine
(B) Glycine
(C) Tryptophan
(D) Tyrosine

72. How many genes (approximately) does the human genome contain?

(A) 3 billion
(B) 300000
(C) 30000
(D) 3000

73. Which one of the following is NOT a post-transcriptional modification?

(A) Poly-adenylation
(B) 3'-capping
(C) 5'-capping
(D) RNA editing

74. Which of the following is associated with zinc-finger domains?

(A) C3-C4
(B) C2-H5
(C) C2-H2
(D) C4-C4

75. Who proposed codons?

(A) Watson and Crick
(B) Crick and Brenner
(C) Brenner and Nurse
(D) Nirenberg, Holley and Khorana

76. Gene expression is analysed by

(A) Southern Blot
(B) Western Blot
(C) Northern Blot
(D) Eastern Blot

77. Elizabeth Blackburn and co-workers were awarded Nobel Prize in 2009 for the discovery of

(A) Chromatinase
(B) Centromere
(C) Telomerase
(D) Centromerase

78. Which one of the following does not require a template?

(A) RNA replicase
(B) RNA polymerase
(C) Reverse transcriptase
(D) Terminal transferase

79. Which of the following phages contains single-stranded DNA?

(A) M13
(B) T4
(C) Lambda
(D) Phi 6

80. What connects *Tetrahymena thermophila* and Sidney Altman and Thomas Cech?

(A) Proposal of 'RNA world' hypothesis
(B) Discovery of Ribozyme
(C) Discovery of Ribonuclease
(D) Discovery of RNA

81. The relationship between aeration and bubble size in a reactor is related to

(A) aeration increases, the bubble size increases
(B) aeration increases, bubble size stays consistent
(C) aeration increases, bubble size becomes inconsistent
(D) aeration increases, the bubble size decreases

82. Which of the following choices represents a typical bioprocessing sequence?

(A) Stock culture → shake flask → seed fermenter → fermenter → purification → product
(B) Stock culture → seed fermenter → shake flask → fermenter → purification → product
(C) Shake flask → stock culture → seed fermenter → fermenter → purification → product
(D) Stock culture → shake flask → fermenter → seed fermenter purification → product

83. Hybridoma cells are produced by the fusion of

(A) two different strains of myeloma cells
(B) immortal myeloma cell and B lymphocyte
(C) RBC and WBC
(D) human lymphocyte and sheep spleen cells

84. The size of the pores in HEPA (high efficiency particulate air) filter is around

(A) $3A^{\circ}$ (B) 3mm
(C) $0.3\,\mu M$ (D) $0.3A^{\circ}$

85. Which of the following is a cryoprotectant?

(A) Sodium chloride (B) Beta-mercaptoethanol
(C) Sodium alginate (D) Ethylene glycol

86. Obligate anaerobes usually produce

(A) superoxide dismutase
(B) catalase
(C) both superoxide dismutase and catalase
(D) neither superoxide dismutase nor catalase

87. The following diseases are caused by Prions except

(A) Creutzfeldt-Jakob disease
(B) Hansen's disease
(C) Sheep Scrapie
(D) Transmissible Spongiform Encephalopathies

88. Which of the following has DNA as the genetic material?

(A) Adenovirus (B) Hepatitis A virus
(C) Influenza virus (D) Rhinovirus

89. The chief proponent of endosymbiosis theory is

(A) Barbara McClintock (B) Daphne Osborne
(C) Lynn Margulis (D) Rosalind Franklin

90. Which of these viruses is commonly linked to cervical cancer?

(A) Human Herpes virus
(B) Human immunodeficiency virus
(C) Human influenza virus
(D) Human papilloma virus

91. Which of these is considered as a biological control agent of insect pests?

(A) Baculovirus
(B) Poxvirus
(C) Rhinovirus
(D) Rhabdovirus

92. Which of the following is not correctly matched?

(A) *Anabaena – Cycas*
(B) *Azotobacter – Clover*
(C) *Bradyrhizobium – Soybean*
(D) *Frankia – Casuarina*

93. 'Starch conversion' means

(A) fermentable starch is converted into unfermentable esters
(B) fermentable starch is converted into unfermhentable starch
(C) unfermentable starch is converted into fermentable lipids
(D) unfermentable starch is converted into fermentable sugars

94. The most rapid method to resynthesize ATP during exercise is through

(A) glycolysis
(B) phosphocreatine breakdown
(C) tricarboxylic acid cycle (Krebs' cycle)
(D) glycogenolysis

95. Fatty acids are transported into the mitochondrion bound to

(A) Thiokinase
(B) Coenzyme (CoA)
(C) Acetyl-CoA
(D) Carnitine

96. Pairs of electrons carried in the forms, $FADH_2$ and $NADHH^+$, collectively contain enough free energy to form

(A) 6 ATP
(B) 5 ATP
(C) 4 ATP
(D) 3 ATP

97. Which of the following nucleotide bases is not found in RNA?

(A) Thymine
(B) Adenine
(C) Uracil
(D) Guanine

98. Codons are composed of

(A) triplet sequences of nucleotide bases in mRNA
(B) triplet sequences of nucleotide bases in DNA
(C) triplet sequences of amino acids in polypeptide chains
(D) triplet sequences of deoxyribose sugars in DNA

99. The transcription of DNA to messenger RNA occurs

(A) on the ribosomes
(B) in the cytosol
(C) in the nucleus
(D) only during cell division

100. Wilson's disease is caused by the deficiency of

(A) Selenium
(B) Copper
(C) Cobalt
(D) Calcium

101. Which one of the following is not a method for immobilizing enzymes?

(A) Membrane confinement
(B) Absorption
(C) Entrapment
(D) Adsorption

102. An analytical device which converts a biological response into an electrical signal is

(A) biosensor
(B) electrode
(C) Colorimeter
(D) autoanalyzer

103. Name the oligomer with enzyme-like activity

(A) isoforms
(B) zymogens
(C) isozymes
(D) synzymes

104. Which of the following reaction has been used in vinegar production?

(A) Enzymes converting pyruvate to oxaloacetate
(B) Enzymes converting lactate to pyruvate
(C) Enzymes oxidizing glucose to glucoronic acid
(D) Enzymes oxidising ethanol to acetic acid

105. Fermentation activity of microorganisms was discovered by

(A) Benjamin Franklin
(B) Louis Pasteur
(C) Max Planck
(D) Niels Bohr

106. A protease which coagulates milk protein and has been used by cheese makers is

(A) rennin
(B) amylase
(C) catalase
(D) None of the above

107. The following one is a popular biodiesel plant

(A) Jasmine
(B) Jatropha
(C) Acacia
(D) Euphorbia

108. DNA library is created from

(A) t-RNA
(B) mRNA
(C) rRNA
(D) sRNA

109. In modern taxonomy, to solve dispute among species, the following molecular tool is employed

(A) DNA barcoding
(B) mRNA
(C) cDNA library
(D) DNA library

110. Which of the following is a non-communicable disease?

(A) Diabetes
(B) Jaundice
(C) Dengue
(D) Chikungunya

111. Many types of cancers can be permanently cured by

(A) naked plasmid DNA injection
(B) lentiviral vectors
(C) radiation therapy
(D) human embryonic stem cell therapy

112. *Helicoverpa armigera* is a pest on

(A) Cotton
(B) Jatropha
(C) Brinjal
(D) Maize

113. Aerobic treatment of municipal waste water is mainly carried out by

(A) trickling filter
(B) biogas plant
(C) sludge digestion tank
(D) fermentation tank

114. The most possible primary consequence of the greenhouse effect is

(A) temperature change
(B) melting of polar ice cap
(C) raising of sea level
(D) climatic changes

115. The national center for collection and maintenance of microbial cultures is situated at

(A) CCMB, Hyderabad
(B) IARI, New Delhi
(C) IMTECH, Chandigarh
(D) NBRI, Lucknow

116. The commonly used drug in AIDS patient is

(A) AZT
(B) Acyclovir
(C) Pyramethamine
(D) Trimethoprim

117. The first case of a life patenting was done by

(A) Ananda Chakrabarty
(B) Milstein and Kohler
(C) Rolfe
(D) Cocking

118. A bacterium can divide every 20 minutes. Beginning with a single individual, how many bacteria will there be in the population if there is an exponential growth for 3 hours?

(A) 18
(B) 440
(C) 512
(D) 1024

119. DNA footprinting is used to

(A) settle disputed parentage
(B) detect protein-biding sites of DNA
(C) clone DNA
(D) separate DNA by gel electrophoresis

120. In PCR reaction, DNA denaturation temperature is usually at

(A) 95°C
(B) 75°C
(C) 120°C
(D) 65°C

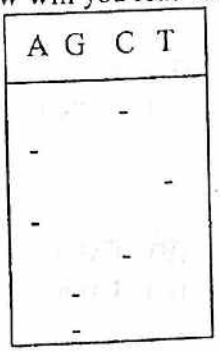
121. Most abundant polysaccharide on the Earth is

(A) cellulose
(B) lignin
(C) chitin
(D) pectin

122. Cloning was first carried out in

(A) dog
(B) cat
(C) monkey
(D) sheep

123. How will you read the nucleotide sequence of the following?



(A) GGCATAC
(B) AAGGCCT
(C) CATACGG
(D) TCCGGAA

124. The Bhopal gas tragedy was due to

(A) CH_4
(B) MIC
(C) CO
(D) NaN_3

125. The large subunit of RuBPCase is coded by

(A) chloroplast genome
(B) mitochondrial genome
(C) nuclear genome
(D) nuclear and Chloroplast genomes

126. In delayed fruit ripening, the technique used was

(A) anti-sense RNA
(B) ss-RNA
(C) ds-RNA
(D) ds-DNA

127. Harvesting of sunlight energy is carried out by

(A) leucoplast
(B) chromoplast
(C) amyloplast
(D) chloroplast

128. In animal cell culture and development, which of the following gas is predominantly used?

(A) CO_2
(B) SO_2
(C) N_2
(D) CH_3

129. Arabidopsis is most commonly used in molecular biology experiments because of

(A) small genome
(B) tiny plant
(C) short duration of life span
(D) no Intron

130. The colorimetric principle is based on

(A) Lambert's law
(B) Beer's law
(C) Beer-Lambert's law
(D) Cotton law

131. Radioactivity can be measured by

(A) GM counter
(B) Cytophotometer
(C) X-ray diffraction
(D) Cyclotron

132. What is the light source in electron microscope?

(A) Actinic light
(B) UV light
(C) Fluorescent light
(D) Electron gun

133. To study thousands of gene expression at a time, the following technology is employed

(A) microarray
(B) gene sequencing
(C) southern blotting
(D) 2DE

134. Heat labile compounds are sterilized using

(A) cryopreservation
(B) filtration
(C) steaming
(D) optimum temperature

135. SV40 is a

(A) microbial virus
(B) plant virus
(C) animal virus
(D) cyanophage

136. Which one of the following gases causes global warming?

(A) Methane
(B) H_2
(C) CO
(D) SO_2

137. The protein database is

(A) SWISS-PROT
(B) NDBJ
(C) NCBI
(D) NDNAD

138. The bioinformatics code for Phenylalanine is

(A) M
(B) F
(C) P
(D) W

139. The following plant has insecticidal property

(A) Azadirachta
(B) Lantana
(C) Petunia
(D) Potato

140. Which is the precursor for biodegradable plastics?

(A) PHB
(B) α-Tocopherol
(C) ALA
(D) Phytosterol

141. Vinblastin is produced by

(A) *Vinca rosea*
(B) *Vernonia cinera*
(C) *Verticillium*
(D) *Vallisneria*

142. Acid rain is due to

(A) SO_2
(B) CH_4
(C) N_2
(D) O_3

143. Waste management can be effectively carried out through

(A) incineration
(B) dumping sites
(C) vermicomposting
(D) decomposing

144. Which of the following codes is for antibiotic resistance in bacteria?

(A) Plasmid
(B) Pilus
(C) Capsule
(D) Plasma Membrane

145. One of the following is an autoimmune disease, which one?

(A) Rheumatoid arthritis
(B) Cystic fibrosis
(C) Malarial fever
(D) AIDS

146. Vaccine production was first demonstrated by

(A) Edward Jenner
(B) Muller
(C) Morgan
(D) Beedle

147. Vitamin C is a

(A) water soluble vitamin
(B) reductant
(C) oxidant
(D) oxido-reductant

148. Curdlan is a

(A) jellying agent
(B) oxidising agent
(C) reducing agent
(D) sieving agent

149. What is a nanometer?

(A) 1/1000m
(B) 1/1000mm
(C) 1/100μm
(D) 1/1000 μm

150. In drug development discovery which of the following organisms is used as a model system?

(A) Mealybug
(B) Silkworm
(C) *Caenorhabditis elegans*
(D) Oozy fly

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