Shivaji University , Kolhapur

Seat No.	

Paper Code(ENT202017)

M.Sc Entrance Exam , MAY-2020

58722-Biotechnology/Biochemistry/Medical Information Management

Day And Date : Sunday 22/11/2020 **Total Marks :** 100

Time : 10:30 To 12:00

		Marks
1	If an enzyme has optimal pH value of 2, it is most likely present in A) Stomach B) Deodenum C) Mouth D) Gall bladder	1
2	Haploid plants can be obtained from A) Leaf culture B) Bud culture C) Root culture D) Anther culture	1
3	[a1, a2, a3] is called a --------- A) row matrix B) Coloumn matrix C) determinant D) database	1
4	The ovule in which embryo sac become horse shoe shaped in A) Amphitropous B) Camphylotropous C) Orthotropous D) Anatropous	1
5	Morphine is obtained from A) Aconitum nacelles B) Papaver somniferum C) Rauwolffia serpentina D) Cinchona officinalis	1
6	In meiosis-I, the Centromere undergoes A) Division between anaphase and Interphase B) Division between prophase and metaphase C) Division but the daughter chromosomes do not separate D) No division	1
7	Development of shoot and root is determined by A) Cytokinin and auxin ratio B) Enzymes C) Temperature D) Plant nutrients	1

8	Which of the following is used in pencils? A) Graphite B) Silicon C) Charcoal D) Phosphorous	1
9	Washing soda is the common name for A) Sodium carbonate B) Calcium bicarbonate C) Sodium bicarbonate D) Calcium carbonate	1
10	Which of the following disinfectant is effective against viruses? A) Formaldehyde B) Hydrogen peroxide C) Hypoclorite D) All of these	1
11	Which of the following pioneers of Microbiology is credited with the discovery of microorganisms using high quality magnifying lenses (early microscopes)? A) Anton Van Leeuwenhoek B) Louis Pasteur C) Robert Hooke D) Robert Koch	1
12	Peptidoglycan is also known as A) N-acetyl muramic acid B) .murein mucopeptide C) N acetylglucosamine D) mesodiaminopimetic acid	1
13	Which of the following is an example of chemolithoautotroph? A) Sulphur-oxidizing bacteria B) Hydrogen bacteria C) Nitrifying bacteria D) All of the above	1
14	Which of the following virulence factors of E. coli is important for attachment to host epithelial cells in the A) Alpha hemolysin B) Urease C) . K1 antigen D) Pili	1
15	Peptone water and nutrient broth are A) selective media B) enriched media C) basal media D) none of these	1
16	Which of the following bacteria can grow in alkaline pH? A) Shigella B) Lactobacilli C) Salmonella D) Vibrio cholerae	1

17	virus establishes itself in an animal : A) By killing the animal cells and replacing them with its own genetic material B) By invading the animal cells and replicating the cell's genetic material C) By creating new animal cells D) By invading the animal cells and replicating its own genetic material	1
18	Generation time of Escherichia coli is A) 20 minutes B) 20 hours C) 200 minutes D) 20days	1
19	Light year is a measurement of A) speed of aeroplanes B) speed of light C) Stellar distances D) speed of rockets	1
20	Among following ----------is well known laboratory organism? A) B. subtilis B) E. coli C) S. Typhi D) HIV	1
21	Bacterial DNA is not cleaved by its own restriction enzymes because they are ---------- A) Methylated B) Deleted C) Bound by inhibitory protein D) Not accessible to restriction enzyme.	1
22	Malaria is caused by ---------- A) Ascaris B) Foulair C) Leech D) Plasmodium	1
23	In prokaryotes, protein synthesis is carried out by ……ribosomes A) 30 S B) 80 S C) 50 S D) 70 S	1
24	The components of an ecosystem are A) Trees and weeds B) Plants and animals C) Man and plants D) Biotic and abiotic	1
25	Among following …….is a high level language A) FORTRAN B) UNIX C) FASTA D) Assembler	1

26 Peptidoglycan layer present in the cell wall of …….. 1

A) Archaeobacteria

B) Bacteria

C) Fungi

D) Higher plants

27 The first letter code of aspartate amino acid is…… 1

A) d

B) f

C) g

D) e

28 Which of the following is the smallest amino acid 1

A) Glycine

B) Proline

C) Cysteine

D) Serine

29 The medium which allows the growth of more than one microorganisms of interest but with morphologically distinguishable colonies is known as 1

A) selective medium

B) enrichment medium

C) differential medium

D) none of these

30 Which of the following is a rich source of vitamin B12 1

A) Liver

B) Green leafy vegetables

C) Cheese

D) Citrus fruits

31 Which of the following buffer helps to maintain our body pH? 1

A) Phosphate buffer

B) Carbonate -bicarbonate buffer

C) Acetate buffer

D) Tris buffer

32 A biological polymer contains an imidazole group, a phenyl group and guanido group containing moieties. Which of the following will be the nature of this molecule 1

A) Cellulose

B) Protein

C) Cerebrosides

D) Nucleic acids

33 An example of a digestive hormone is 1

A) Gastrin

B) Insulin

C) Pepsin

D) Thyroxin

34 Taxol is an anticancer agent which acts by 1

A) Inhibiting DNA synthesis

B) Intercalating with the DNA

C) Interfering with the mitotic spindle

D) Inhibiting enzymes of DNA synthesis

35 Reaction center of photo system-I in green plants is 1
A) P680
B) P690
C) P700
D) P780

36 In nucleoside, nitrogen base is attached to pentose sugar at 1
A) Carbon – 1 of pentose sugar
B) Carbon – 2 of pentose sugar
C) Carbon – 4 of pentose sugar
D) Carbon – 5 of pentose sugar

37 DNA molecules makes a complete turn after every 1
A) 20 Å
B) 34 Å
C) 3.4 Å
D) 10 base pairs

38 Which of the following is not tool of genetic engineering? 1
A) Vectors
B) Enzymes
C) Foreign DNA
D) GMO

39 The most common plasmid vector used in genetic engineering is 1
A) PBR 328
B) PBR 322
C) PBR 325
D) PBR 330

40 Three dimensional shape of tRNA is 1
A) L-shaped
B) Clover leaf-like
C) X-shaped
D) Y-shaped

41 Genome is 1
A) Genes on nuclear DNA
B) Nuclear DNA + mitochondrial DNA
C) Nuclear DNA + chloroplast DNA
D) Nuclear DNA + Mitochondrial DNA + Chloroplast DNA

42 VNTRs represnets 1
A) New terminal regions in DNA
B) Functional genes in the DNA
C) Split genes in the sample DNA
D) Specific non-coding sequences with unique tandem repeats

43 Variations observed during tissue culture of some plants are known as 1
A) Clonal variations
B) Somatic variations
C) Somaclonal variations
D) Tissue culture variations

44	Callus is A) Tissue that forms embryo B) an insoluble carbohydrate C) Unorganised actively dividing mass of cells maintained in culture D) Tissue that growth to form embryoid	1
45	The codons which may present at 3¢ end of mRNA A) UAA B) UAG C) UGA D) Any one of these	1
46	Double fertilization is found in A) Bryophytes B) Angiosperms C) Gymnosperms D) Pteridophytes	1
47	DNA fingerprinting is based on A) Occurance of VNTR’s B) Knowledge of human karyotype C) Cloned DNA D) Recombinant DNA	1
48	Dolly sheep was genetically similar to A) The mother from which nucleated fertilized egg was taken B) The mother from which nuclear DNA of udder cell was taken C) The surrogate mother D) Both surrogate mother and nuclear donor mother	1
49	The complete set of chromosomal and extrachromosomal genes of an organisms is called A) Genome B) Gene pool C) Gene bank D) Gene library	1
50	5.The DNA segment to be cloned is called A) a.Gene segment B) b.DNA fragment C) c.DNA insert D) d.All of these	1
51	8.Which of the following is not a restriction endonuclease? A) a.Eco RI B) b.DNA ligase C) c.Hind III D) d.Bam H1	1
52	10.Taq polymerase is used in PCR because of its A) a.Low thermal stability B) b.High fidelity C) c.High speed D) d.High thermal stability	1

53	Nick translation is done by A) a.DNA polymerase I B) b.DNA polymerase II C) c.DNA ligase D) d.Kinase	1
54	Which of the following is a thermo stable DNA polymerase A) a.Taq polymerase B) b.Vent polymerase C) c.Pfu polymerase D) d.All of these	1
55	Eco R1 is a A) a.Endonuclease B) b.Polymerase enzyme C) c.Ligase D) d.Exonuclease	1
56	What is the net yield of ATP in anaerobic glycolysis? A) 36 B) 38 C) 2 D) May vary from time to time	1
57	The hormone responsible for ripening of fruits is A) Ethylene B) Cytokinin C) Auxin D) ABA	1
58	Table sugar used by us regularly is A) Sucrose B) Fructose C) Dextrose D) Glucose	1
59	Which of the following indicates that the pK of an acid is numerically equal to the pH of the solution when the molar concentration of the acid and its conjugate base are equal? A) Michaelis Menton's equation B) Hardy Weinberg equation C) Henderson-Hasselbalch equation D) Briggs Haldane's equation	1
60	Which of the following enzyme is required to release the tension imposed by uncoiling of strands A) Endonuclease B) DNA ligase C) DNA gyrase D) DNA helicase	1
61	Ecosystem may be defined as A) A species along with environment B) Plants found in water C) Plant found in land D) All plants and animal species along with environment	1

62 The nodule forming bacteria are 1
A) Azotobacter
B) Nitrobacter
C) Clostridium
D) Rhizobium

63 Pituitary gland is located in..... 1
A) Intestine
B) Liver
C) Kidney
D) Brain

64 Where do primary consumers get their energy? 1
A) directly from the sun
B) eating producers
C) eating animals
D) eating dead things

65 Which of the following statements is true? 1
A) Invertebrates possesses a tubular nerve cord
B) Non-chordates have a vertebral column
C) All chordates are vertebrates
D) All vertebrates are chordates

66 Which of the following reptile has four chambered heart? 1
A) Turtle
B) King cobra
C) Crocodile
D) Sphenodon

67 Fossils are most commonly preserved in..... 1
A) Metamorphic rocks
B) Igneous rocks
C) Sedimentary rocks
D) Any type of rock

68 Select the correct statement 1
A) Legumes are incapable of fixing nitrogen
B) Legumes fix nitrogen through bacteria living in fruits
C) Legumes fix nitrogen only by bacteria present in root nodules
D) None of the above

69 Which organism possesses characteristics of plants and animals? 1
A) Bacteria
B) Monera
C) Euglena
D) Mycoplasma

70 Ambulacral system (Water vascular system) is present in 1
A) Annelides
B) Arthropods
C) Molluscs
D) Echinoderms

71 The genotypic ratio of a mono-hybrid cross is..... 1
A) 3:1
B) 1:2:1
C) 2:1:1
D) 9:3:3:1

72 High content of sugar in honey is..... 1
A) Glucose
B) Sucrose
C) Fructose
D) Lactose

73 Sitophilus oryzae is a common stored grain pest of 1
A) Sugar
B) Rice
C) Sugarcane
D) Pulses

74 Mulberry silkworm is..... 1
A) Bombax mori
B) Anthraea mylitta
C) Anthreaea assamensis
D) Attacus altas

75 Animals with chitinous exoskeleton are.... 1
A) Sea-Urchin
B) Insects
C) Snail
D) Sponges

76 Fertilization of ova in human take place in..... 1
A) Overy
B) Vagina
C) Fallopian tube
D) Uterus

77 Which of the following is tapeworm? 1
A) Schistosoma
B) Fasciola
C) Enterobius
D) Taenia

78 The newly hatched tadpole is breaths through its..... 1
A) External gills
B) Internal gills
C) Lungs
D) All of the above

79 Stomata in bryophytes are present in the 1
A) Capsule
B) Leaf
C) Stem
D) Seta

80	Bacteriophage are readily counted by the process of: A) Immunoassays B) . ELISA C) Plaque assays D) Tissue cell culture	1
81	The gram-negative organisms is A) Actinomyces B) Bacillus C) Clostridium D) None of these	1
82	Hemoglobin is a A) Structural protein B) Transport protein C) Storage protein D) Defense protein	1
83	The end product of glycolysis on vigorous exercise is A) Pyruvate B) Acetyl CoA C) Lactate D) CO2	1
84	Electromagnetic radiations with maximum wavelength is_____ A) Ultraviolet B) Radiowaves C) X-ray D) Infrared	1
85	Which of the following has a negative charge? A) Neutrino B) Neutron C) Positron D) Antiproton	1
86	The oxidation number of carbon in CH2O is _____. A) -2 B) +2 C) 00 D) +4	1
87	The strongest hydrogen bond present in _____. A) O-H-----S B) S-H----O C) F-H----F D) F-H----O	1
88	Who proposed corpuscular theory of light? A) Newton B) Einstein C) Rutherford D) Calvin	1

89 These are vector quantities, except _____. 1
A) Displacement
B) Velocity
C) Accelaration
D) Temperature

90 Development of saprophyte from gametophyte, is called 1
A) Apomixis
B) Apospory
C) Apogamy
D) Diplospory

91 In CGS system, the unit of mass is _____. 1
A) Gram
B) Second
C) Centimeter
D) Kilogram

92 A molal solution is one that contains one mole of the solute in _____. 1
A) 1000 gms of solvent
B) 1000 ml of solvent
C) 1000 ml of solution
D) 22.4 lit of solution

93 The unit of activation energy is/are _____. 1
A) Kg
B) Kg/mole
C) KJ/K
D) KJ/K.mole

94 The copper is mainly extracted from _____. 1
A) Cuprite
B) Azurite
C) Copper pyrites
D) Malachite

95 Human Genome Project was completed in ---------- 1
A) 2003
B) 1999
C) 1973
D) 2000

96 A -------- is a set of instructions executed by the computer 1
A) Program
B) Data
C) Output
D) None of these

97 Among following --------- is a browser program. 1
A) MS Word
B) Database Program
C) Netscase
D) Help Program

98	1 kb corresponds to …….bytes A) 1024 B) 1000 C) 10 D) 2000	1
99	2.Integrated circuits are used in .....generation of computers. A) a.third B) b.first C) c.second D) d.None of the above	1
100	Which blood group is called the universal donor ? A) A B) B C) O D) AB	1