

**Shivaji University , Kolhapur**  
**B.Sc. (Part- III (Semester –V) Examination, October-2020**  
**BOTANY (PAPER-XII) Subject. Code: 65839**  
**(Plant Biochemistry)**

Signature of Student

Signature of Jr. Supervisor

Seat No.-

PRN:

**Day and Date: October, 2020****Total Marks: 50****Time:**

- Instructions:** **A Attempt any 25 questions**  
**B Each question carries 2 marks.**  
**C First 25 solved questions will be considered for the evaluation.**  
**D Write the correct alternative answer in the box**

1.----- is the general formula of monosaccharides

- a)  $C_{12}H_{22}O_{11}$                       b)  $(C_6H_{10}O_5)_n$   
c)  $C_n H_{2n}O_n$                       d)  $C_6H_{12}O_3$

2. Starch is composed of -----

- a) amylose                      b) amylose and amylopectin  
c) pectin                      d) suberin

3. ----- is the general formula of monosaccharides

- a)  $C_{12}H_{22}O_{11}$                       b)  $(C_6H_{10}O_5)_n$   
c)  $C_n H_{2n}O_n$                       d)  $C_6H_{12}O_3$

4. ----- on hydrolysis gives large number of monosaccharides

- a) oligosaccharides              b) monosaccharides  
c) polysaccharides              d) lipids

5.  $(C_6H_{10}O_5)_n$  is the general formula of -----

- a) maltose                      b) starch  
c) raffinose                      d) sucrose

6. ----- have same structural formula but differs in configuration.

- a) structural isomers              b) stereoisomers  
c) functional isomers              d) positional isomers

7. What kind of polysaccharide cannot be digested by human beings?  
a) Cellulose      b) glucose      c) starch      d) sucrose
8. Which of the following is a polysaccharide?  
a) Cellulose    b) fructose    c) glucose    d) sucrose
9. Which of the following pathway is not used for triacylglycerol synthesis?  
a) Glycerol 3-phosphate pathway   
b) Monoacylglycerol pathway  
c) Glyoxylate pathway  
d) Kennedy pathway
10. What is lipolysis?  
a) Breakdown of ketone bodies   
b) Formation of lipids  
c) Hydrolysis of triacylglycerol  
d) Formation of ketone bodies
11. What are the functions of dietary fat   
a) Provide energy to the body  
b) Form part of cellular membranes  
c) All options given are correct  
d) Cell signaling
12. What is the biosynthetic source of all steroid hormones?   
a) Carbohydrate  
b) Ketone bodies  
c) Cholesterol  
d) Protein
13. What is the solubility of lipids in water?   
a) Soluble  
b) Partially soluble  
c) Insoluble  
d) Partially insoluble

14. The melting point of fatty acids depends upon chain length and \_\_\_\_\_
- a) The shape of the fatty acids
  - b) Charge on the carbon
  - c) The position of the double bond
  - d) Degree of unsaturation
15. Which of the following form of lipids are also referred as neutral lipids?
- a) Phospholipids
  - b) Steroid
  - c) Triacylglycerol
  - d) Wax
16. Which of the following sterol is present in the cell membrane of fungi?
- a) Sitosterol
  - b) Stigmasterol
  - c) Ergosterol
  - d) Campesterol
17. Double-helix structure of DNA is discovered by \_\_\_\_\_
- a) Gobind Khurana
  - b) Nirenberg
  - c) Watson and Crick
  - d) Darwin
18. What is a mode of replication in E.coli?
- a) Intermediate
  - b) Dispersive
  - c) Conservative
  - d) Semiconservative
19. Which of the following would relax negatively supercoiled DNA?
- a) DNA gyrase
  - b) Collagen
  - c) Type I topoisomerase
  - d) Elastin
20. How many stop codons are there in the genetic code?
- a) 1
  - b) 2
  - c) 3
  - d) 4

21. Which of the following statements is true about DNA polymerase?

- a) DNA polymerase can synthesize mRNA in the 3' to 5' direction
- b) DNA polymerase can synthesize DNA in the 5' to 3' direction
- c) DNA polymerase can synthesize mRNA in the 5' to 3' direction
- d) DNA polymerase can synthesize DNA in the 3' to 5' direction

22. DNA exists in a double-stranded form whereas RNA is mainly a single stranded molecule. What is the likely reason for DNA being double stranded?

- a) RNA strands cannot form base pairs
- b) Double stranded DNA is a more stable structure
- c) DNA cannot exist in the single stranded form
- d) It is easier to replicate double stranded DNA than single stranded RNA

23. What should be the complementary strand of 3'...ATGGCTTGA...5'?

- a) 3'...TACCGAACT...5'
- b) 5'...TACCGAACT...3'
- c) 3'...TAGGCAAGT...5'
- d) 5'...TAGGCAAGT...3'

24. In a DNA double helix the bases are held together by hydrogen bonds. These hydrogen bonds are \_\_\_\_\_

- a) Covalent bonds
- b) Non-covalent bonds
- c) Ionic bonds
- d) Van der Waals forces

25. Peptide bond is a \_\_\_\_\_

- a) Covalent bond
- b) Ionic bond
- c) Metallic bond
- d) Hydrogen bond

26. The average molecular weight of an amino acid residue in a protein is about

- a) 128
- b) 118
- c) 110
- d) 120

27. Unfolding of a protein can be termed as \_\_\_\_\_

- a) Renaturation
- b) Denaturation
- c) Oxidation
- d) Reduction

28. What of the following is not a factor responsible for the denaturation of proteins?

- a) pH change
- b) Organic solvents
- c) Heat
- d) Charge

29. Conversion of messages carried by mRNA into amino acid sequences is called \_\_\_\_\_

- a) Replication
- b) DNA repair
- c) Translation
- d) Transcription

30. Name the sequence of RNA, which is recognized by a small subunit of the ribosome.

- a) Rho utilization site
- b) Downstream sequence
- c) Upstream sequence
- d) Shine Dalgarno sequence