

1. If  $A = \begin{pmatrix} 2 & 0 \\ 0 & 8 \end{pmatrix}$  then  $\rho(A) =$  \_\_\_\_\_  
 a) =0            b) 1            c) 2            d) n
2. If  $A = \begin{pmatrix} 1 \\ 2 \\ 3 \end{pmatrix}$  then the rank of  $AA^T$  is \_\_\_\_\_.  
 a) 0            b) 1            c) 2            d) 3
3. The rank of  $m \times n$  matrix whose elements are unity is \_\_\_\_\_.  
 a) 0            b) 1            c) m            d) n
4. Rank of null matrix is \_\_\_\_\_.  
 a) 0            b) -1            c)  $\infty$             d) 1
5. If the matrix  $A = \begin{pmatrix} 5 & k \\ 3 & 2 \end{pmatrix}$  has no inverse then  $k =$   
 a) -5            b)  $\frac{10}{3}$             c)  $-\frac{10}{3}$             d) -2
6. If  $|A| \neq 0$ , then A is \_\_\_\_\_.  
 a) non-singular matrix    b) singular matrix  
 c) zero matrix            d) none of these
7. If  $\rho(A) \neq \rho(A, B)$  then the system is  
 a) consistent and has infinitely many solution  
 b) consistent and has a unique solution  
 c) inconsistent            d) consistent
8. If  $T = \begin{pmatrix} 0.7 & 0.3 \\ 0.6 & x \end{pmatrix}$  is a transition probability matrix, then the value of x is  
 a) 0.2            b) 0.3            c) 0.4            d) 0.7
9. The rank of the diagonal matrix  $\begin{pmatrix} 1 & & & & \\ & 2 & & & \\ & & -3 & & \\ & & & 0 & \\ & & & & 0 \\ & & & & & 0 \end{pmatrix}$   
 a) 0            b) 2            c) 3            d) 5
10. In a transition probability matrix, all the entries are greater than or equal to \_\_\_\_\_.  
 a) 2            b) 1            c) 0            d) 3

II. Answer for 4 of the following questions: 4x2=8  
 Q.No.15 is compulsory

11. Find the rank of the matrix  $\begin{pmatrix} 1 & 5 \\ 3 & 9 \end{pmatrix}$
  12. Find the rank of  $\begin{pmatrix} -1 & 2 & -2 \\ 4 & -3 & 4 \\ -2 & 4 & -4 \end{pmatrix}$
  13. Solve by Cramer's rule:  $2x+3y=7$   
 $3x+5y=9$
  14. Find the rank of AB where  $A = \begin{pmatrix} 1 & 1 & -1 \\ 2 & -3 & 4 \\ 3 & -2 & 3 \end{pmatrix}$ ,  
 $B = \begin{pmatrix} -1 & 2 & -1 \\ 6 & 12 & 6 \\ 5 & 10 & 5 \end{pmatrix}$
  15. Find the rank of the matrix  $A = \begin{pmatrix} 1 & -3 & 4 & 7 \\ 9 & 1 & 2 & 0 \end{pmatrix}$
- III. Answer for 4 of the following questions: 4x3=12  
 Q.No.20 is compulsory
16. Find the rank of the matrix  $A = \begin{pmatrix} 5 & 3 & 14 & 4 \\ 0 & 1 & 2 & 1 \\ 1 & -1 & 2 & 0 \end{pmatrix}$
  17. Show that the equations  $x-4y+7z=14$ ,  $3x+8y-2z=13$ ,  
 $7x-8y+26z=5$  are inconsistent.
  18. The total cost of 11 pencils and 3 erasers is Rs.64 and the total cost of 8 pencils and erasers is Rs.49. Find the cost of each pencil and each eraser by Cramer's rule.
  19. Akash bats according to following transits. If he makes a hit(s) there is a 25% chance that he will make a hit his next time at bat. If he fails to hit (F), there is a 35% chance that he will make a hit his next time at bat. Find the transition probability matrix for the data and determine Akash long-range batting average.
  20. Solve by Cramer's rule:  $6x-7y=16$   
 $9x-5y=35$
- IV. Answer for 2 of the following questions: 2x5=10  
 Q.No.23 is compulsory
21. Solve by using Cramer's rule,  $x+4y+3z=2$ ,  $2x-6y+6z=-3$ ,  
 $5x-2y+3z=-5$
  22. Find k, if the equations  $x+y+z=7$ ,  $x+2y+3z=18$ ,  $y+kz=6$  are inconsistent.
  23. The cost of 2kg of wheat and 1kg of sugar is Rs.7. The cost of 1kg wheat and 1kg of rice is Rs.7. The cost of 3kg of wheat, 2kg of sugar and 1kg of rice is Rs.17. Find the cost of each per kg, using cramer's rule.

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12.06.19 Monthly Test - June Time: 1.15 hrs  
STD: XII (F-J) Computer Application Marks: 50

I. Choose the correct answer: 15x1=15

1. Bitmap is a simple matrix of the tiny dots called  
a) images b) colors c) pixels d) data
2. \_\_\_\_\_ animation involves moving an object on a screen that has a constant background.  
a) Three b) Sound c) Path d) Two
3. \_\_\_\_\_ converts a multimedia presentation into a web page.  
a) Architect b) Web Master c) Manager d) Editor
4. Multimedia has \_\_\_\_\_ major components.  
a) three b) five c) two d) four
5. \_\_\_\_\_ is a compressed image format.  
a) BMP b) GIF c) TIFF d) b & c
6. \_\_\_\_\_ is the process of displaying images in a continuous movement.  
a) Graphics b) GIF c) Animation d) Video
7. \_\_\_\_\_ is the measurement of volume.  
a) Mb b) Decibel c) Level d) Sound
8. \_\_\_\_\_ is the most widely used multimedia resource on internet.  
a) Text b) Image c) Audio d) Video
9. \_\_\_\_\_ is defined as the display of recorded events, scene etc.,  
a) Audio b) Sound c) Animation d) Video
10. The least frame rate of \_\_\_\_\_ per second in animation.  
a) 36 b) 25 c) 16 d) 48
11. \_\_\_\_\_ format in the primary file format introduced in 1987 by Microsoft.  
a) Rich text b) Plain text c) Bitmap d) DIB
12. MIDI stands for \_\_\_\_\_.  
a) Musical Identifier Digital Instrument  
b) Musical Instrument Digital Identifier  
c) Multimedia Identifier Digital Identity  
d) Media Instrument Digital Instrument
13. \_\_\_\_\_ number of colors are determined using eight bits.  
a) 256 b) 16 c) 24 d) 8

14. The specific statements in the project is known as \_\_\_\_\_.  
a) Design b) Objectives c) Production d) Team

15. \_\_\_\_\_ is the basic components of multimedia.

- a) Images b) Video c) Text d) Audio

II. Write the expansion: 10x1=10

16. MIDI -
17. RTF -
18. TIFF -
19. JPEG -
20. PNG -
21. WAV -
22. AIFF -
23. AVI -
24. MPEG -
25. OCR -

III. Answer any 5 of the following: 5x2=10

1. Define Animation and their features.
2. List out image file formats.
3. List out Multimedia production.
4. Write about the menu bar of PageMaker.
5. Differentiate Ellipse tool from Ellipse frame tool.
6. What is a pasteboard in PageMaker?

IV. Answer any 5 of the following: 5x3=15

1. Describe the various file formats in multimedia.
2. Write roles and responsibilities of production team members.
3. Define webcasting and video conferencing.
4. How do you select the text?
5. Write the short cut key for Tool box.
6. Write the steps for deleting a text.

I. Choose the correct answer:

25x1=25

1. Which of the following is not invalid?
  - a) `_a=1`
  - b) `_a=-1`
  - c) `_str_=1`
  - d) none
2. Which of the following is the use of function in python?
  - a) Functions don't provide better modularity for your application
  - b) Functions are reusable pieces of programs
  - c) You can't create your own functions
  - d) All
3. What is the answer of this expression,  $22\%3$  is?
  - a) 0
  - b) 7
  - c) 1
  - d) 5
4. Operators with the same precedence are evaluated in which manner?
  - a) Right to Left
  - b) Left to Right
  - c) Can't say
  - d) None
5. Which one of the following have the same precedence?
  - a) Addition and subtraction
  - b) Multiplication and division
  - c) Both addition & subtraction and multiplication & division
  - d) none
6. What is the default return value for a function that does not return any value. Explicitly?
  - a) int
  - b) double
  - c) public.
  - d) none
7. Which of the following Function definition does not return any value?
  - a) a function that returns a random integer from 1 to 100
  - b) a function that prints integers from 1 to 100
  - c) a function that checks whether the current second is an integer from 1 to 100
  - d) a function that converts an uppercase letter to lowercase.
8. What is the output of the following code snippet?
 

```
def my func (text, num):
    while num>0:
        print (text)
        num=num-1
    my func ('Hello', 4)
```

  - a) Hello Hello Hello Hello
  - b) Hello Hello Hello Hello
  - c) infinite loop
  - d) invalid call
9. \_\_\_\_\_ represents an entity in the real world with its identity and behaviour.
  - a) a method
  - b) a class
  - c) an object
  - d) an operator
10. The small sections of code that are used to perform a particular task is called \_\_\_\_\_.
  - a) files
  - b) Pseudo code
  - c) subroutines
  - d) Modules
11. The values which are passed to a function definition are called
  - a) subroutines
  - b) function
  - c) arguments
  - d) Definition
12. Which of the following defines what an object can do?
  - a) Operating system
  - b) Interface
  - c) Compiler
  - d) Interpreter
13. The functions which will give exact result when same arguments are passed called \_\_\_\_\_.
  - a) Pure function
  - b) Partial function
  - c) dynamic function
  - d) Impure function
14. \_\_\_\_\_ means splitting a program into many modules.
  - a) modularity
  - b) Abstraction
  - c) Data variables
  - d) none

15. \_\_\_\_\_ are the representation for 'Abstraction Data Type'.  
a) Classes    b) function    c) Object    d) all
16. \_\_\_\_\_ gives an implementation independent view.  
a) Derived types    b) abstract    c) concrete    d) (a) or (b)
17. List ADT can be implemented using \_\_\_\_\_ linked list and \_\_\_\_\_ linked list.  
a) singly    b) double    c) a & b    d) a or b
18. Two functions in data abstraction are \_\_\_\_\_ & \_\_\_\_\_.  
a) Lists and Tuples    b) Constructors and Selectors  
c) Constructors and destructors    d) All
19. \_\_\_\_\_ are functions to retrieve the information from the data type.  
a) Constructors    b) Selectors    c) Objects    d) a & b
20. \_\_\_\_\_ extract individual pieces of information from the object.  
a) Objects    b) Constructors    c) Selectors    d) a or b
21. Which strategy is followed for designing program?  
a) 'wishful thinking'    b) 'Best match'    c) 'First match'    d) all
22. The first way to implement pair is with the \_\_\_\_\_ construct.  
a) list    b) pair    c) Tuple    d) none
23. \_\_\_\_\_ can store multiple values.  
a) ADT    b) list    c) abstract    d) None
24. How many ways to represent data types?  
a) 2    b) 1    c) 3    d) 4
25. num[0] represents which index position of the value?  
a) second    b) zero    c) first    d) fourth

II. Answer the following: 5x2=10

26. What is an algorithm?
27. What is a pair? Give an example.

28. What is mapping?
- 29 Why scope should be used for variables? State the reason.
30. Differentiate between interface and implementation.

III. Answer the following: 5x3=15

31. Distinguish between Pure & Impure function.
32. Distinguish between List & Tuples.
33. What are the different ways to access elements of a list? Give example.
34. Why access control is required?
35. Define Enclosed scope with an example.

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12.06.19 Monthly Test - June Time: 1.15 hrs  
STD: XII (A-E) Bio-Botany Marks:25

- I. Fill in the blanks: 3x1=3
1. \_\_\_\_\_ described Structure of Pollen tetad.
  2. \_\_\_\_\_ reported Poly Embryony.
  3. \_\_\_\_\_ published the Book – An introduction to embryology of Angiosperms.
- II. Answer the following: 4x2=8
4. Define Totipotent.
  5. Define Pollinium.
  6. Define Synergids.
  7. Distinguish Protandry and Protogyny
- III. Answer the following: 3x3=9
8. Write a note on any three types of ovules.
  9. Write a note on Monocliny.
  10. What are the Post Fertilization changes?
- IV. Answer in detail: 1x5=5
11. Write a detailed account on the types of pollination.

Bio-Zoology Marks:25

- I. Answer any three of the following: 3x1=3
1. Define Karyokinesis.
  2. Define Cytokinesis.
  3. Write about Oblique binary fission.
  4. Define Schizogony.
  5. Define Gemmules.
  6. Define Morphallaxis.
- II. Answer any five of the following: 5x2=10
7. Write about Senescent phase.
  8. Define Hologamy.
  9. What is Autogamy?
  10. Define Conjugation.
  11. Describe Incomplete Parthenogenesis.
  12. Define Interstitial cells or Leydig cells.
  13. Define Sertoli cells.
- III. Answer any four of the following: 4x3=12
14. Distinguish the transverse binary fission from Longitudinal binary fission.
  15. Distinguish Endogenous budding from Exogenous budding.
  16. Distinguish External fertilization from Internal fertilization.
  17. Distinguish Natural parthenogenesis from Complete parthenogenesis.
  18. Distinguish Gastrulation from Organogenesis.