Applied Mathematics (Direct Second Year) (SY BSc. IT)

Academic year 2020-2021

INTERNAL EXAMINATION (OCTOBER 2020)

Class : SY
Branch : BSc. IT
Semester : III
Subject : Applied Mathematics
Course Code: USIT305

Total marks : 20
Time : 11:00 - 11:30 am
Duration: 30 minutes

* Required

1. Email address *

2. Full Name *

3. Roll No. *

4. Class and Department *

Mark only one oval.

- SY B.Sc. IT

5. Semester *

Mark only one oval.

- III

9. What will be value of A + I if A is *

$$\begin{bmatrix} 3 & 4 \\ 1 & 2 \end{bmatrix}$$

Mark only one oval.

$$\begin{bmatrix} 4 & 4 \\ 1 & 3 \end{bmatrix}$$

Option 1

$$\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$$

Option 2

$$\begin{bmatrix} 4 & 3 \\ 1 & 0 \end{bmatrix}$$

Option 3

None

12. Modulus of 5 + 12i *

Mark only one oval.

- 13
- 5
- 12
- None

13. Polar form of (1 + i) *

Mark only one oval.

- $2\sqrt{2}\,(cos\,cos\,\frac{\pi}{4} + i\,sin\,sin\,\frac{\pi}{4})$
- $cos\,\frac{\pi}{4} + i\,sin\,\frac{\pi}{4}$
- $cos\,\frac{\pi}{3} + sin\,\frac{\pi}{3}$
- None

16. If A is singular matrix then what is x when A = *

$$\begin{bmatrix} x & 2 \\ 4 & 1 \end{bmatrix}$$

Mark only one oval.

- x=8
- x=4
- x=3
- None

17. Argument of (i + 1) = *

Mark only one oval.

- $\frac{\pi}{2}$
- $\frac{\pi}{3}$
- $\frac{\pi}{6}$
- $\frac{\pi}{4}$

22. AA^{-1} *

Mark only one oval.

- I
- 2I
- 3I
- A

23. Characteristic Equation of matrix *

$$\begin{bmatrix} 2 & 4 \\ 3 & 2 \end{bmatrix}$$

Mark only one oval.

- $\lambda^2 - 4\lambda - 8 = 0$
- Null Matrix
- $\lambda^2 + 4\lambda - 8 = 0$
- None

24. If A is orthogonal matrix then $A.A^T$ *

Mark only one oval.

- A
- A^T
- I
- None

Database Management Systems (Direct Second Year) (SY BSc.IT)

Academic year 2020-2021

INTERNAL EXAMINATION (OCTOBER 2020)

Class : SY
Branch : BSc. IT
Semester : III
Subject : Database Management Systems
Course Code: USIT304

Total marks : 20
Time : 11:00 - 11:30 am
Duration: 30 minutes

* Required

1. Email address *

2. Full Name *

3. Roll No. *

4. Class and Department *

Mark only one oval.

- SY B.Sc. IT

5. Semester *

Mark only one oval.

- III

10. The view of total database content is _____ *

Mark only one oval.

- Conceptual View
- Internal View
- External View
- Physical View

11. Which of the following is a property of an entity? *

Mark only one oval.

- Attribute
- Groups
- Tables
- Keys

12. Which of the following is not a basic building block in data model? *

Mark only one oval.

- Constraints
- Entity
- Primary key
- Relationship

13. The property / properties of a database is / are : *

Mark only one oval.

- It is an integrated collection of logically related records.
- It consolidates separate files into a common pool of data records
- Data stored in a database is independent of the application programs using it
- All of the above

18. The number of entities to which another entity can be associated via a relationship set is expressed as *

Mark only one oval.

- Entity
- Cardinality
- Schema
- Attributes

19. Consider attributes ID, CITY and NAME. Which one of this can be considered as a super key? *

Mark only one oval.

- NAME
- ID
- CITY
- CITY, ID

20. An attribute in a relation is a foreign key if the _____ key from one relation is used as an attribute in that relation. *

Mark only one oval.

- Candidate
- Primary
- Super
- Sub

21. What is the correct sequence of steps for Database development life cycle? *

Mark only one oval.

- Requirement Analysis -> Database Design -> Implementation
- Database Design -> Requirement Analysis -> Implementation
- Implementation -> Database Design -> Requirement Analysis
- Requirement Analysis -> Implementation -> Database Design

26. ER Model Stands for *

Mark only one oval.

- Entity Relationship Model
- Each Relationship Model
- Entity Resource Model
- None of the above

27. _____ is a collection of processes that facilitate the designing, development, implementation and maintenance of enterprise database management systems. *

Mark only one oval.

- Data Modelling
- Database Design
- Database Management System
- None of the above

Computer Networks (Direct Second Year) (SY BSc. IT)

Academic year 2020-2021

INTERNAL EXAMINATION (OCTOBER 2020)

Class : SY
Branch : BSc. IT
Semester : III
Subject : Computer Networks
Course Code: USIT303

Total marks : 20
Time : 01:00 - 01:30 pm
Duration: 30 minutes

* Required

1. Email address *

2. Full Name *

Roll No. *

4. Class and Department *

Mark only one oval.

SY B.Sc. IT

5. Semester *

Mark only one oval.

III

10. The _____ is a measure of how fast we can actually send data through a network. *

Mark only one oval.

- Latency
- Jitter
- Throughput
- All of the above

11. Which of the following Allows the physical medium to be idle for an arbitrary time between two transmissions. *

Mark only one oval.

- Asynchronous Transmission
- Synchronous Transmission
- Isochronous Transmission
- Monosynchronous Transmission

12. In a _____ topology, every device has a dedicated point-to-point link to every otherdevice. *

Mark only one oval.

- Star
- Ring
- Mesh
- Hybrid

13. Which of the following are layers in the TCP/IP model? (Multiple options can be selected) *

Check all that apply.

- [ ] Application
- [ ] Session
- [ ] Transport
- [ ] Internet

18. _____ is implemented by changing the amplitude of a carrier signal to reflect amplitude levels in the digital signal. *

Mark only one oval.

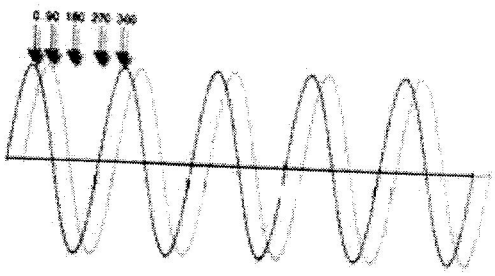
- ASK
- FSK
- PSK
- QAM

19. Long wavelength depicts _____ frequency and short wavelength depicts _____ frequency. *

Mark only one oval.

- High, Low
- Low, High
- All of the above
- None of the above

20. Below image resembles which of the following? *



Mark only one oval.

- In phase
- Out of phase
- All of the above
- None of the above

25. A transmission mode that can transmit data in both the directions but transmits in only one direction at a time. *

Mark only one oval.

- Simplex
- Half duplex
- Full duplex
- None of the above

26. In _____ transmission, we send 1 start bit (0) at the beginning and 1 or more stop bits (1s) at the end of each byte. There may be a gap between each byte. *

Mark only one oval.

- Asynchronous
- Synchronous
- All of the above
- None of the above

27. What is the second step in PCM encoder technique? *

Mark only one oval.

- Sampling
- Quantization
- Binary Conversion
- None of the above

Data Structures (Direct Second Year) (SY BSc.IT)

Academic year 2020-2021

INTERNAL EXAMINATION (OCTOBER 2020)

Class : SY
Branch : BSc. IT
Semester : III
Subject : Data Structures
Course Code: USIT302

Total marks : 20
Time : 11:00 - 11:30 am
Duration: 30 minutes

Required

1. Email address *

2. Full Name *

Roll No. *

4. Class and Department *

Mark only one oval.

SY B.Sc. IT

5. Semester *

Mark only one oval.

III

10. _____ data structures are predefined types of data which are supported by programming language *

Mark only one oval.

- Linear
- Non-linear
- Primitive
- Non-primitive

11. Different Linear Data Structures are (Multiple options can be selected) *

Check all that apply.

- [ ] Array
- [ ] Linked List
- [ ] Stack
- [ ] Graph

12. Order for Queue is ___ *

Mark only one oval.

- LIFO (Last In First Out)
- FIFO (First In First Out)
- Ordered Array
- Linear Tree

13. _____ data structure follows parent-child relationship *

Mark only one oval.

- Graphs
- Trees
- Stack
- Queue

18. Assuming int is of 4bytes, what is the size of int arr[15];? *

Mark only one oval.

- 15
- 19
- 11
- 60

19. Elements in an array are accessed _____ *

Mark only one oval.

- randomly
- sequentially
- exponentially
- logarithmically

20. The matrix contains m rows and n columns. The matrix is called Sparse Matrix if _____ *

Mark only one oval.

- Total number of Zero elements > (m*n)/2
- Total number of Zero elements = m + n
- Total number of Zero elements = m/n
- Total number of Zero elements = m-n

21. Process of inserting an element in stack is called _____ *

Mark only one oval.

- Create
- Push
- Evaluation
- Pop

26. The theta (Θ) notation in asymptotic evaluation represents *

Mark only one oval.

- Best case
- Worst case
- Null case
- Average case

27. O(1) means computing time is _____ *

Mark only one oval.

- Constant
- Linear
- Quadratic
- Cubic

Python Programming (Direct Second Year) (SY BSc.IT)

Academic year 2020-2021

INTERNAL EXAMINATION (OCTOBER 2020)

Class : SY
Branch : BSc. IT
Semester : III
Subject : Python Programming
Course Code: USIT301

Total marks : 20
Time : 01:00 - 01:30 pm
Duration: 30 minutes

* Required

1. Email address *

2. Full Name *

Roll No. *

4. Class and Department *

Mark only one oval.

SY B.Sc.IT

5. Semester *

Mark only one oval.

III

10. What is the output of the expression -> print(-18 // 4)? *

Mark only one oval.

- -4
- 4
- -5
- 5

11. 4 is (100) in binary and 11 is (1011). What is the output of the following bitwise operators? *

```
a = 4
b = 11
print(a | b)
print(a >> 2)
```

Mark only one oval.

- 15 1
- 14 1
- 15 0
- 14 0

14... What is the output of the following loop? *

```
for l in 'Jhon':
        if l == 'o':
                continue
        print(l, end=", ")
```

Mark only one oval.

- J, h, n,
- J, h,
- J, h, o, n,
- None of the above

15. Select the right way to create a string literal Ault'Kelly. *

Mark only one oval.

- str1 = 'Ault\\'Kelly'
- str1 = 'Ault\'Kelly'
- str1 = """Ault'Kelly"""
- None of the above

16. Choose the correct function to get the ASCII code of a character. *

Mark only one oval.

- char('char')
- ord('char')
- ascii('char')
- chr('char')

20... What is the output of the following function call? *

```
def fun1(name, age=20):
    print(name, age)
fun1('Emma', 25)
```

Mark only one oval.

- Emma 25
- Emma 20
- Syntax Error
- None

21. What is the output of the following code? *

```
salary = 8000
def printSalary():
        salary = 12000
        print("Salary:", salary)
printSalary()
print("Salary:", salary)
```

Mark only one oval.

- Salary: 12000 Salary: 8000
- Salary: 8000 Salary: 12000
- Syntax Error
- None of the above

22. What is the output of the following code? *

```
aList = ["PYnative", [4, 8, 12, 16]]
print(aList[0][1])
print(aList[1][3])
```

Mark only one oval.

- P 8
- Y 12
- P 12
- Y 16

26. . . What is the output of the following? *

```
aTuple = "Yellow", 20, "Red"
a, b, c = aTuple
print(a)
```

Mark only one oval.

- ('Yellow', 20, 'Red')
- TyepeError
- Yellow
- 20

27. What is the output of the following tuple operation? *

```
aTuple = (100,)
print(aTuple * 2)
```

Mark only one oval.

- TypeError
- (100, 100)
- (200)
- None of the above