Green Technologies (FY BSc. CS)

Academic year 2020-2021

INTERNAL EXAMINATION (MARCH 2021)

Class : FY
Branch : BSc. CS
Semester : II
Subject : Green Technologies
Course Code: USCS207

Total marks : 20
Time : 1:00 pm - 1:30 pm
Duration: 30 minutes

* Required

1. Email address *

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2. Full Name *

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3. Roll No. *

   _____

4. Class and Department *

   Mark only one oval.

   ◯ FY BSc. CS

5. Semester *

   Mark only one oval.

   ◯ II

10. Identify the non-renewable energy resource from the following: *

Mark only one oval.

- Coal
- Fuel cells
- Wind power
- Wave power

11. Which of the following is a disadvantage of most of the renewable energy sources? *

Mark only one oval.

- Highly polluting
- High waste disposal cost
- Unreliable supply
- High running cost

12. Photovoltaic energy is the conversion of sunlight into: *

Mark only one oval.

- Chemical energy
- Biogas
- Electricity
- Geothermal energy

13. Horizontal axis and vertical axis are the types of: *

Mark only one oval.

- Nuclear reactor
- Wind mills
- Biogas reactor
- Solar cell

18. Both power and manure is provided by: *

Mark only one oval.

○ Nuclear plants

○ Thermal plants

○ Biogas plants

○ Hydroelectric plant

19. The outermost layer of the earth is: *

Mark only one oval.

○ Magma

○ Mantle

○ Crust

○ Solid iron core

20. Common energy source in Indian villages is: *

Mark only one oval.

○ Electricity

○ Coal

○ Sun

○ Wood and animal dung

21. The one thing that is common to all fossil fuels is that they: *

Mark only one oval.

○ Were originally formed in marine environment

○ Contain carbon

○ Have undergone the same set of geological processes during their formation

○ Represent the remains of one living organisms

26. The first controlled fission of an atom was carried out in Germany in: *

Mark only one oval.

- 1920
- 1928
- 1925
- 1938

27. Boiling water reactor and pressurized water reactors are: *

Mark only one oval.

- Nuclear reactor
- Solar reactor
- OTEC
- Biogas reactor

Statistical Methods and Testing of Hypothesis (FY BSc. CS)

Academic year 2020-2021

INTERNAL EXAMINATION (MARCH 2021)

Class : FY
Branch : BSc. CS
Semester : II
Subject : Statistical Methods and Testing of Hypothesis
Course Code: USCS206

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

* Required

1. Email address *

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2. Full Name *

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   Roll No. *

   _____

4. Class and Department *

   Mark only one oval.

   ◯ FY BSc. CS

5. Semester *

   Mark only one oval.

   ◯ II

6. Subject *

   Mark only one oval.

   ⬭ Statistical Methods and Testing of Hypothesis

7. Subject Code *

   Mark only one oval.

   ⬭ USCS206

   All Questions are Compulsory

8. The expected value of a discrete random variable 'x' is given by _____. *

   Mark only one oval.

   ⬭ $\sum x\, P(x)$

   ⬭ $\sum P(x)$

   ⬭ $\sum x$

   ⬭ $P(x)$

9. Out of the following values, which one is not possible in probability? *

   Mark only one oval.

   ⬭ $P(x) = 0.1$

   ⬭ $P(x) = 1$

   ⬭ $P(x) = 0.5$

   ⬭ $P(x) = -0.5$

10. A table with all possible value of a random variable and its corresponding probabilities is called *

Mark only one oval.

◯ Cumulative distribution function

◯ Probability Distribution

◯ Probability Density Function

◯ Probability Mass Function

11. The variable that assigns a real number value to an event in a sample space is called _____. *

Mark only one oval.

◯ Static variable

◯ Defined variable

◯ Random variable

◯ Continuous variable

12. What is the mean and variance for standard normal distribution? *

Mark only one oval.

◯ Mean is 0 and variance is 1

◯ Mean is 1 and variance is 0

◯ Mean is 0 and variance is 2

◯ Mean is 0 and variance is 3

13. If the probability of hitting the target is 0.4, find mean and variance. *

Mark only one oval.

◯ 0.5, 0.28

◯ 0.6, 0.27

◯ 0.3, 0.25

◯ 0.4, 0.24

14. Mean of a random variable X is given by _____. *

Mark only one oval.

- ⬭ E(X)+1
- ⬭ E(X)+2
- ⬭ E(X)
- ⬭ E(X)+3

15. E(X) = npq is for which distribution? *

Mark only one oval.

- ⬭ Binomial
- ⬭ Poisson's
- ⬭ Normal
- ⬭ Bernoulli's

16. E(X) = μ and V(X) = σ^2 is for which distribution? *

Mark only one oval.

- ⬭ Binomial
- ⬭ Poisson's
- ⬭ Normal
- ⬭ Bernoulli's

17. The shape of the Normal Curve is _____. *

Mark only one oval.

- ⬭ Normal
- ⬭ Bell Shaped
- ⬭ Flat
- ⬭ Circular

18. Normal Distribution is symmetric is about _____. *

Mark only one oval.

- ⭘ Variance
- ⭘ Mean
- ⭘ Standard deviation
- ⭘ Covariance

19. For a standard normal variate, the value of mean is? *

Mark only one oval.

- ⭘ 0
- ⭘ 1
- ⭘ 2
- ⭘ 3

20. In a Binomial Distribution, if p, q and n are probability of success, failure and number of trials respectively then variance is given by _____. *

Mark only one oval.

- ⭘ npq
- ⭘ np
- ⭘ 0
- ⭘ 1

21. The mean and variance of a binomial variate are 12 and 6. Find p(x =0) *

Mark only one oval.

- ⭘ (1/2)
- ⭘ (1/3)
- ⭘ (1/8)
- ⭘ $(1/2)^{24}$

22. The shape of the normal curve depends on its _____. *

Mark only one oval.

○ Mean deviation

○ Quartile deviation

○ Standard deviation

○ Correlation

23. Let x be a continuous random variable whose probability density function is $f(x) = x^3/4$ when 0<x<2 then find c.d.f of random variable *

Mark only one oval.

○ 0 , $x^4/16$, 1

○ 0 , x/16, 1

○ 0 , x/15, 1

○ 0 , x/14, 1

24. If X is continuous random variable with p.d.f. $f(x) = k / x$ when 1<x <3 and $f(x) = 0$ otherwise , then find k and mean *

Mark only one oval.

○ 1/log 5 , 2/ log3

○ 1/log 6 , 2/ log3

○ 1/log 37, 2/ log3

○ 1/log 3 , 2/ log3

25. In a sampling a large number of parts manufactured by a machine , the mean number of detective in a sample of 20 is 2. out of 1000 such samples how many would expected to contain atleast 3 defective parts. *

Mark only one oval.

○ 345

○ 323

○ 365

○ 321

26. A basket contains 20 good oranges and 80 bad oranges. 3 oranges are drawn at random from this basket. Find the probability that out of 3 ,exactly 2 are good oranges. *

Mark only one oval.

- ( ) 0.384
- ( ) 0.484
- ( ) 0.584
- ( ) 0.684

27. Six dice are thrown 720 times. How many times do you expect at least 3 dice to show a 4 or 6. *

Mark only one oval.

- ( ) 234
- ( ) 230
- ( ) 453
- ( ) 342

Calculus (FY BSc. CS)

Academic year 2020-2021

INTERNAL EXAMINATION (MARCH 2021)

Class : FY
Branch : BSc. CS
Semester : II
Subject : Calculus
Course Code: USCS205

Total marks : 20
Time : 1:00 pm - 1:30 pm
Duration: 30 minutes

* Required

1. Email address *

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2. Full Name *

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3. Roll No. *

   ....

4. Class and Department *

   Mark only one oval.

   ⬭ FY BSc. CS

5. Semester *

   Mark only one oval.

   ⬭ II

10. The function is *

If $f(x) = 4x+1 \quad x \le 2$

$\qquad = x^2 + 5 \quad x>2$, at $x = 2$

Mark only one oval.

◯ Differentiable at x= 0

◯ Differentiable at x= 1

◯ Differentiable at x= 2

◯ Differentiable at x= 3

1. Evaluate: *

If $y = Ae^{5x} + Be^{-5x}$ x then d^2y/dx^2 is equal to

Mark only one oval.

◯ 25y

◯ 5y

◯ -25y

◯ 10y

12. A function $f(x) = 1/(x-5)$ for x ∈ R is *

Mark only one oval.

◯ Continuous at x=5

◯ Not continuous at x=5

◯ Defined at x=5

◯ Semi continuous at x=5

16. If $f(x) = = x^2 + 2x - 5$ is an increasing function, find value of x. *

Mark only one oval.

- X > 1
- X > -1
- X > 2
- X > 3

17. For what values of X the curve $y = 3x^2 - 2x^3$ is concave upwards? *

Mark only one oval.

- x < 1/4
- x < 1/2
- x < 1/5
- x < 1/6

18. The absolute minima for the function $x^3 - 147x$ is *

Mark only one oval.

- 686
- -686
- 687
- -687

21. Evaluate: $\lim_{\theta \to 0}(\sin\theta/6\theta)$ *

Mark only one oval.

○ 1/6

○ 1/7

○ 1/8

○ 1/9

22. Differentiate $y = x^x$ *

Mark only one oval.

○ x(1+lnx)

○ x^x(1+logx)

○ (1+lnx)

○ Xy

23. If $f(x) = e^x x$, local minimum value is *

Mark only one oval.

○ f(-1) = -1/e

○ f(-1) = -1/4

○ f(-1) = -1/3

○ f(-1) = -1/5

24. If $f(x) = logx/x$ in [1,3], absolute maximum value is *

Mark only one oval.

○ 1/2 at x=e

○ 1/4 at x=e

○ 1/3 at x=e

○ 1/e at x=e

Data Structures (FY BSc. CS)

Academic year 2020-2021

INTERNAL EXAMINATION (MARCH 2021)

Class : FY
Branch : BSc. CS
Semester : II
Subject : Data Structures
Course Code: USCS204

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

* Required

1. Email address *

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2. Full Name *

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3. Roll No. *

_____

4. Class and Department *

   Mark only one oval.

   ◯ FY BSc. CS

5. Semester *

   Mark only one oval.

   ◯ II

10. Information hiding is also known as *

   Mark only one oval.

   ○ abstraction

   ○ polymorphism

   ○ inheritance

   ○ traversal

11. An _____ is an object that provides a mechanism for performing generic traversals through a container without having to expose the underlying implementation. *

   Mark only one oval.

   ○ iterator

   ○ condition

   ○ formation

   ○ inheritance

12. Once an array is created, its size _____ be changed. *

   Mark only one oval.

   ○ cannot

   ○ can

   ○ maybe

   ○ always

13. _____ is the function to delete elements in the python list. *

   Mark only one oval.

   ○ pop

   ○ add

   ○ append

   ○ push

18. To determine if the two students are taking the exact same courses. If not, then we want to know if they are taking any of the same courses. We can do this by computing the_____ between the two sets. *

Mark only one oval.

◯ Union

◯ Intersection

◯ Difference

◯ Add

19. A _____ is a container for storing a collection of data records in which each record is associated with a unique key. The key components must be comparable. *

Mark only one oval.

◯ Set

◯ Map

◯ Array

◯ List

20. What is the worst case for linear search? *

Mark only one oval.

◯ O(n)

◯ O(log n)

◯ O(n2)

◯ O(n log n)

21. Where is linear searching used? *

Mark only one oval.

◯ When the list has only a few elements

◯ When performing a single search in an unordered list

◯ Used all the time

◯ When the list has only a few elements and When performing a single search in an unordered list

26. What is the complexity of the following code snippet? *

```
def remove( self, element ):
    assert element in self, "The element must be in the set."
    self._theElements.remove( item )
```

Mark only one oval.

- ◯ O(n)
- ◯ O(n²)
- ◯ O(logn)
- ◯ O(aⁿ)

27. In _____ algorithm, values from the unsorted part are picked and placed at the correct position in the sorted part. *

Mark only one oval.

- ◯ Bubble Sort
- ◯ Insertion Sort
- ◯ Merge Sort
- ◯ Quick Sort

Linux (FY BSc. CS)

Academic year 2020-2021

INTERNAL EXAMINATION (MARCH 2021)

Class : FY
Branch : BSc. CS
Semester : II
Subject : Linux
Course Code: USCS203

Total marks : 20
Time : 1:00 pm - 1:30 pm
Duration: 30 minutes

* Required

1. Email address *

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2. Full Name *

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3. Roll No. *

    _____

4. Class and Department *

    Mark only one oval.

    ⬭ FY BSc. CS

5. Semester *

    Mark only one oval.

    ⬭ II

10. Which command is used to extract a column from a text file? *

Mark only one oval.

- ◯ paste
- ◯ get
- ◯ cut
- ◯ tar

11. Which command is used to extract intermediate result in a pipeline? *

Mark only one oval.

- ◯ tee
- ◯ extract
- ◯ exec
- ◯ echo

12. Which command is used to display disk consumption of a specific directory? *

Mark only one oval.

- ◯ du
- ◯ ds
- ◯ dd
- ◯ dds

13. Which among the following interacts directly with system hardware? *

Mark only one oval.

- ◯ Shell
- ◯ Commands
- ◯ Kernel
- ◯ Applications

18. User's Primary Group id is listed in which file, at the time of creation of the user (On a standard Unix system) *

Mark only one oval.

◯ /etc/passwd

◯ /etc/groups

◯ /etc/login

◯ /etc/profile

19. The system calls in UNIX is written using which language_____ *

Mark only one oval.

◯ C

◯ C++

◯ Assembly Language

◯ Fortran

20. Which of the following UNIX flavor is from IBM? *

Mark only one oval.

◯ BSD

◯ Solaris

◯ HP-UX

◯ AIX

21. Which of the following command can be used to change the user password? *

Mark only one oval.

◯ user can't change the password

◯ passwd

◯ passd

◯ pwd

26. The prompt of the root user is_____ *

Mark only one oval.

- ⚪ @
- ⚪ #
- ⚪ %
- ⚪ $

27. Help for all commands is available at_____. *

Mark only one oval.

- ⚪ Man command
- ⚪ Help command
- ⚪ Join command
- ⚪ Tput command

Programming with Python - II (FY BSc. CS)

Academic year 2020-2021

INTERNAL EXAMINATION (MARCH 2021)

Class : FY
Branch : BSc. CS
Semester : II
Subject : Programming with Python - II
Course Code: USCS202

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

* Required

1. Email address *

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2. Full Name *

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3. Roll No. *

   _____

4. Class and Department *

   Mark only one oval.

   ◯ FY BSc. CS

5. Semester *

   Mark only one oval.

   ◯ II

10. In file handling, what does this terms means "r, a"? *

Mark only one oval.

◯ read, append

◯ write, append

◯ read, write

◯ read, append, write

11. What happens if no arguments are passed to the seek function? *

Mark only one oval.

◯ file position is set to the start of file

◯ file position is set to the end of file

◯ file position remains unchanged

◯ error

12. Python has a built-in package called? *

Mark only one oval.

◯ re

◯ regex

◯ reg

◯ regx

13. Which function returns a list containing all matches in regular expression? *

Mark only one oval.

◯ find()

◯ search()

◯ findall()

◯ split()

18. Widget inside another Widget is possible by creating_____.*

Mark only one oval.

○ Another window

○ Frames

○ Buttons

○ Labels

19. To get the multiple line user data, which widget we use? *

Mark only one oval.

○ Entry

○ Text

○ Message

○ MessageBox

20. Which function is used to read all the characters? *

Mark only one oval.

○ Read()

○ Readcharacters()

○ Readall()

○ Readchar()

21. Correct way to draw a line in canvas tkinter? *

Mark only one oval.

○ line()

○ canvas.create_line()

○ create_line(canvas)

○ create_canvas_line()

26. When will the finally part of try-except-finally be executed? *

Mark only one oval.

◯ always

◯ when an exception occurs

◯ when no exception occurs

◯ when an exception occurs in to except block

27. What happens when '1' == 1 is executed? *

Mark only one oval.

◯ we get a True

◯ we get a False

◯ an TypeError occurs

◯ ValueError occurs

Programming with C (FY BSc. CS)

Academic year 2020-2021

INTERNAL EXAMINATION (MARCH 2021)

Class : FY
Branch : BSc. CS
Semester : II
Subject : Programming with C
Course Code: USCS201

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

* Required

1. Email address *

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2. Full Name *

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3. Roll No. *

   _____

4. Class and Department *

   Mark only one oval.

   ◯ FY BSc. CS

5. Semester *

   Mark only one oval.

   ◯ II

9. What is the value of x in this C code? *

```c
int main()
{
    int a=32;

    do
    {
        printf("%d ", a);
        a++;
    }while(a <= 30);

    return 0;
}
```

Mark only one oval.

- ( ) 32
- ( ) 33
- ( ) 30
- ( ) Error

10. The format identifier '%i' is also used for _____ data type? *

Mark only one oval.

- ( ) char
- ( ) int
- ( ) float
- ( ) double

11. Which of the following is not a correct datatype? *

Mark only one oval.

- ( ) Float
- ( ) Int
- ( ) Real
- ( ) Double

16. Which operator has the lowest priority? *

Mark only one oval.

- ( ) ++
- ( ) %
- ( ) +
- ( ) &&

17. Which of the following is not an arithmetic operation? *

Mark only one oval.

- ( ) a *= 20;
- ( ) a /= 30;
- ( ) a %= 40;
- ( ) a != 50;

18. What is the output of this C code? *

```c
int main()
{
    int k, j;

    for(k=1, j=10; k <= 5; k++)
    {
        printf("%d ", (k+j));
    }

    return 0;
}
```

Mark only one oval.

- ( ) Compiler error
- ( ) 10 10 10 10 10
- ( ) 10 11 12 13 14 15
- ( ) Runtime error

22. Which keyword is used to prevent any changes in the variable within a C program? *

Mark only one oval.

- ⬭ Immutable
- ⬭ Mutable
- ⬭ Const
- ⬭ Volatile

23. The continue statement. cannot be used with _____. *

Mark only one oval.

- ⬭ for
- ⬭ while
- ⬭ do while
- ⬭ switch

24. All keywords in C are in _____. *

Mark only one oval.

- ⬭ LowerCase letters
- ⬭ UpperCase letters
- ⬭ Camel Case letters
- ⬭ Sentence Case letters