



ਆਈ.ਕੇ. ਗੁਜਰਾਲ ਪੰਜਾਬ ਟੈਕਨੀਕਲ ਯੂਨੀਵਰਸਿਟੀ (ਅਕਾਦਮਿਕ ਵਿਭਾਗ)



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ਪ੍ਰਿੰਸੀਪਲ / ਡਾਇਰੈਕਟਰ / ਫੈਕਲਟੀ ਇੰਚਾਰਜ
ਐਫੀਲੇਟਿਡ ਕਾਲਜ / ਸੰਸਥਾਵਾਂ ਅਤੇ ਖੇਤਰੀ ਕੈਂਪਸ
ਆਈ.ਕੇ.ਗੁਜਰਾਲ ਪੰਜਾਬ ਟੈਕਨੀਕਲ ਯੂਨੀਵਰਸਿਟੀ।

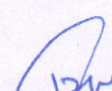
ਵਿਸ਼ਾ :- ਬੀ.ਟੈਕ (ਕੰਪਿਊਟਰ ਸਾਇੰਸ ਇੰਜੀ.) ਬੈਚ 2018 ਤੀਜੇ ਸਮੈਸਟਰ ਦੇ ਨਮੂਨਾ ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਭੇਜਣ ਸਬੰਧੀ।

ਉਪਰੋਕਤ ਵਿਸ਼ੇ ਦੇ ਸਬੰਧ ਵਿੱਚ ਆਪ ਜੀ ਨੂੰ ਬੀ.ਟੈਕ. (ਕੰਪਿਊਟਰ ਸਾਇੰਸ ਇੰਜੀ.) ਬੈਚ 2018 ਸਮੈਸਟਰ ਤੀਜਾ ਦੇ ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦਾ ਨਮੂਨਾ ਇਸ ਪੱਤਰ ਨਾਲ ਨੱਥੀ ਕਰਕੇ ਭੇਜਿਆ ਜਾਂਦਾ ਹੈ। ਆਪ ਜੀ ਨੂੰ ਲਿਖਿਆ ਜਾਂਦਾ ਹੈ ਕਿ ਇਹ ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦਾ ਨਮੂਨਾ ਸਬੰਧਤ ਵਿਦਿਆਰਥੀਆਂ ਅਤੇ ਅਧਿਆਪਕ ਸਾਹਿਬਾਨ ਨੂੰ ਪੁੱਜਦਾ ਕੀਤਾ ਜਾਵੇ ਤਾਂ ਜੋ ਵਿਦਿਆਰਥੀ ਇਮਤਿਹਾਨ ਦੀ ਸੂਚਨਾ ਢੰਗ ਨਾਲ ਤਿਆਰੀ ਕਰ ਸਕਣ। ਆਮ ਜਾਣਕਾਰੀ ਹਿੱਤ ਇਸ ਪੱਤਰ ਨੂੰ ਸੰਸਥਾ ਦੇ ਨੋਟਿਸ ਬੋਰਡ ਉਪਰ ਚਿਸਪਾਨ ਕਰਵਾਇਆ ਜਾਵੇ ਜੀ। ਇਸ ਸਬੰਧੀ ਕੋਈ ਵੀ ਸੁਝਾਅ ਨਿਮਨ ਹਸਤਾਖਰ ਦੇ ਦਫ਼ਤਰ ਨੂੰ ਭੇਜਿਆ ਜਾ ਸਕਦਾ ਹੈ। ਆਪ ਜੀ ਵੱਲੋਂ ਭੇਜੇ ਗਏ ਸੁਝਾਅ ਸਾਡੇ ਲਈ ਮਹੱਤਵਪੂਰਨ ਹਨ।


(ਡਾ. ਬਲਕਾਰ ਸਿੰਘ)
ਡੀਨ ਅਕਾਦਮਿਕ


ਇਸ ਦਾ ਇੱਕ ਉਤਾਰਾ :

1. ਇੰਚਾਰਜ ਸਕੱਤਰੇਤ : ਮਾਨਯੋਗ ਉਪ ਕੁਲਪਤੀ ਜੀ ਦੀ ਜਾਣਕਾਰੀ ਹਿੱਤ।
2. ਡਾਇਰੈਕਟਰ (ਮੇਨ ਕੈਂਪਸ) ਜੀ ਨੂੰ ਸੂਚਨਾ ਹਿੱਤ।
3. ਕੰਟਰੋਲਰ ਪ੍ਰੀਖਿਆਵਾਂ ਜੀ ਨੂੰ ਸੂਚਨਾ ਹਿੱਤ।
4. ਇੰਚਾਰਜ, ਆਈ.ਟੀ.ਐਸ. ਵਿਭਾਗ ਨੂੰ ਯੂਨੀਵਰਸਿਟੀ ਵੈਬਸਾਈਟ ਤੇ ਅਪਲੋਡ ਕਰਨ ਹਿੱਤ।


(ਡਾ. ਬਲਕਾਰ ਸਿੰਘ)
ਡੀਨ ਅਕਾਦਮਿਕ


Total No. of Questions : 09

B. Tech. (Computer Science & Engg. (2018 Batch)

DIGITAL ELECTRONICS
Subject Code: BTES 301-18

Time: 3 Hours

Max Marks: 60

1. SECTION-A is COMPULSORY consisting of TEN questions carrying Two marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

1. Write briefly:

- What is principle of Duality?
- Discuss Race around condition in JK Flip Flop.
- Differentiate between combinational and sequential logic circuits.
- Write short notes on FPGA.
- Realize OR gate using NAND gates.
- What is Ring Counter?
- Define R-2R ladder DAC and its applications.
- Convert $(10101)_{10}$ into binary.
- Describe the term decoder and demultiplexer.
- How you will design a Full Adder circuit using half Adder.

2. State and Prove **DeMorgan's** Theorem.
3. Explain the Working of Master Slave JK Flip Flop.
4. How you will design and implement a 4 bit binary to gray code converter.

5. Illustrate the advantages and disadvantages of TTL Logic family.
6. Simplify the following functions using K-map:

$$f(w,x,y,z) = \sum (0,3,4,6,7,8,10,11,15)$$

SECTION-C

7. What are the types of Analog to digital converter techniques? Explain any one in detail.
 8. Design MOD-6 up-down counter using D flip-flops.
 9. What are programmable logic devices and its Advantages? Explain in details the Architecture of programmable logic devices.
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Roll No.

[Total no. of pages: 1]

[Total no. of Questions: 9]

COURSE : B. Tech. CSE

Sem. : 3rd

Name of Subject: Data Structure and Algorithms

Subject Code: BTCS301-18

Time: 3 hrs.

Maximum Marks: 60

Instructions to candidates:

- 1) Section A is compulsory.
- 2) Attempt any four questions from Section B.
- 3) Attempt any two questions from Section C.

Section -A

(10x2)

1. a. Define data structure.
b. What are asymptotic notations?
c. What is a circular queue?
d. Describe POP operation.
e. Write the role of header node in linked list.
f. Write the difference between B and B+ tree.
g. Define sorting.
h. Write the complexity of heapsort.
i. What are edges in a graph?
j. Write the complexity of deletion algorithm in a graph.

Section- B

(4x5)

2. Explain the concept of time space tradeoff by taking an example.
3. What are priority queues? Write their two applications.
4. Write advantages and disadvantages of doubly linked list as compared with singly linked list.
5. Write a note on hashing.
6. Explain Breadth First search in graphs.

Section C

(2x10)

7. Write an algorithm for inorder traversal in a binary tree. Calculate complexity also.
8. Write and explain an algorithm for converting infix expression into postfix expression using stack.
9. Compare and contrast insertion sort and quick sort.

Roll No: _____

Total No. of Pages: 02

B.Tech CSE (2018 Onwards)
OBJECT ORIENTED PROGRAMMING

Subject Code: BTCS302-18

Paper ID: [A1129]

Time: 3 Hrs.

Max.Marks : 60

INSTRUCTION TO CANDIDATES:

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

1. Write briefly:

- a) What is an inline function? Explain taking suitable example.
- b) Explain the significance of different access specifies in a class.
- c) Why are classes in C++ called Abstract Data Types?
- d) What are disadvantages of using pointers in C++?
- e) Differentiate between early and late binding.
- f) Explain the use of get & put pointer in file handling.
- g) What is the purpose of *this* pointer? Explain with example.
- h) Explain function overriding taking suitable example.
- i) What are container classes?
- j) Explain the importance of friend function with an example.

SECTION-B

2. Explain the use of default and copy constructors taking suitable examples. Can we declare a constructor in the private section of the class? Justify your answer.

3. How base class member functions can be invoked in a derived class if the derived class also has a member function with the same name. Explain taking an example
4. What is pure virtual function? Explain its usage with example.
5. What is operator overloading? Write a program in C++ to overload binary operator *.
6. What do you mean by Multiple Inheritance? Explain with the help of an example.

SECTION-C

7. Write a program in C++ to copy the content of a data file to another file. Make use of the exception handling conditions also.
8. What are templates? Write their syntax and usage. Design a class template in C++ to sort an array.
9. Explain the declaration, accessing and usage of static data members and static member function with the help of suitable examples.