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IV-057

Roll No. 1150104002 Total Printed Pages : 3

04BCS/ICS101

B.TECH.COMPUTER SCIENCE & ENGG.

IV- SEM Examination, May/June - 2017

SUB : PRINCIPLES OF PROGRAMMING LANGUAGES

Time : 3 Hours] **[Total Marks 60**

Use of following supporting material is permitted during examination.

1. Nil 2. Nil

Note: 1. Attempt any five questions.

2. Each question carry equal marks.

1. What is language paradigm? Explain the issues of language design.

2. Explain with example-

i) CFG

ii) BNF

iii) Parse tree

iv) Syntax

v) Semantics

3. What are elementary and structured data types. Also explain its implementation.

4. Explain the following-

i) Array

ii) List

iii) Struthers

iv) Union

5. What is exception handling? Explain through a program- try and catch.

6. What is sub program? Also explain simple and recursive subprogram and parameter passing mechanism.

7. What are data types and abstract data types? Also explain the following-

a) Information hiding

b) Encapsulation

8. Describe the following

i) Static and stack based storage management.

ii) Fixed and variable size heap storage management.

9. a) Explain parallel processing and distributed processing.

b) Explain threads and difference between threads and process.

10. a) What are semaphore. What are its types.

b) Explain the mechanism of message passing.

c) Explain the need of semaphores.

IV-058

Roll No. 1150104002 Total Printed Pages : 4

04BCS/ICS102

B.TECH.COMPUTER SCIENCE & ENGG.

IV- SEM Examination, May/June - 2017

SUB :MICROPROCESSOR AND INTERFACES

Time : 3 Hours] **[Total Marks 60**

Use of following supporting material is permitted during examination.

1. Nil 2. Nil

Note: 1. Attempt any five questions.

2. Each question carry equal marks.

UNIT-I

1. a) What is bus? Explain different types of buses used in 8085 microprocessor.

b) Explain different types of addressing modes used in 8085 microprocessor with suitable example.

OR

2. Explain block diagram of 8085 microprocessor.

UNIT-II

3. Explain following types of instruction-

a) CMA

b) CPI

c) RAR

d) JPO and JPE

e) RST (Restart).

OR

4. Explain the timming diagram of a 2-byte instruction MVI A, 32H.

UNIT-III

5. Explain block diagram of 8254 timer interface with 8085 microprocessor.

OR

6. Explain block diagram of PPI 8255 interface with 8085 microprocessor.

UNIT-IV

7. Explain block diagram of USART 8251 interface with 8085 microprocessor.

OR

8. Explain block diagram of interrupt controller 8259A interface with 8085 microprocessor.

UNIT-V

9. a) Give the difference between 8085, 8086 and 8088.

   b) Explain RS 232 C cable with suitable diagram.

OR

10. Write the short note on (any two)

   a) Pentium processor

   b) MMX

   c) Dual core processor

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IV-059

Roll No. 1150104002 Total Printed Pages : 3

04BCS/ICS103

B.TECH.COMPUTER SCIENCE & ENGG.

IV- SEM Examination, May/June - 2017

SUB :OBJECT ORIENTED PROGRAMMING

Time : 3 Hours] **[Total Marks 60**

Use of following supporting material is permitted during examination.

1. Nil 2. Nil

Note: 1. Attempt any five questions.

2. Each question carry equal marks.

1. What are the classes and objects? Explain the process of creating and destroying objects dynamically using delete operation.

2. What is operator overloading? How will you overload binary unary operations? Discuss both processes with the help of programming implementation.

3. Define the applet fundamental with suitable explain.

4. Define inheritance. Explain single, multiple and multilevel inheritance with the help of block diagram. What ambiguity may arise in case of multiple inheritance and how it is resolved.

5. What is the exception handling? Discuss the exception handling mechanism. With example.

6. Write short notes (any four)

a) Composition of classes

b) Templates

c) Keyword "Using"

d) Abstract class

e) Function overloading and function overriding

f) Container and proxy classes.

7. What is the friend function in C++? Explain the characteristics of friend functions.

8. Write shorts notes-

a) String buffer class

b) Nested and inherit class

c) Constructor

d) Usage of super.

9. Define the virtual function and virtual class with suitable example.

10. Explain structure as a used defing data type in 'C' with the help of suitable example.

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IV-060

Roll No. 1150104002 Total Printed Pages : 2

04BCS/ICS104

B.TECH.COMPUTER SCIENCE & ENGG.

IV- SEM Examination, May/June - 2017

SUB : SYSTEM SOFTWARE

Time : 3 Hours] **[Total Marks 60**

Use of following supporting material is permitted during examination.

1. Nil 2. Nil

Note: 1. Attempt any five questions.

2. Each question carry equal marks.

1. Explain CASE study of MS and DOS linker.

2. What are the difference between assembly language and high level language?

3. Write a technical note on

   a) Design of linker

   b) Block structure in symbol table.

4. Define the grammar and parse tree with the help of suitable example.

5. What is the system software? Define its characteristics.

6. Differentiate between pass structure assembler and assemblers.

7. a) What is the direct addressing mode and indirect addressing mode.

   b) List the types of register used in system.

8. a) Explain in detail HLL specification.

   b) Define overflow technique.

9. What is loader? Explain in detail machine dependent and independent features of loader's.

10. a) What is micro processor's

    b) What is micro assembles

    c) What is bootstrap?

    d) What is translation and execution?

    e) What is lexical analysis?

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IV-061

Roll No. 1150104 0002 Total Printed Pages : 3

04BCS/ICS105

B.TECH.COMPUTER SCIENCE & ENGG.

IV- SEM Examination, May/June - 2017

SUB :STATISTICS AND PROBABILITY THEORY

Time : 3 Hours] **[Total Marks 60**

Use of following supporting material is permitted during examination.

1. Nil 2. Nil

Note: 1. Attempt any five questions. Attempt one each unit.

2. Each question carry equal marks.

UNIT-I

1. State and prove Baye's theorem.

OR

What is the chance that a leap year selected at random will contain 53sundays?

UNIT-II

2. Four bad apples are mixed accidentally with 16good apples. Find the probability distribution of the number of bad apples in a draw of two apples.

OR

A coin is tossed until a head appears. What is the expectation of the number of tosses required?

UNIT-III

3. If a random variable X has linear failure rate function $h(t) = a+bt$. Find its distribution function and the failure density function.

OR

Discuss the mean and various of binomial distribution.

UNIT-IV

4. Six coin are tossed 6400times using the Poisson distribution, determine the approzimate probability of getting six leads r- times.

OR

In a normal distribution, 31% items are under 45 and 8% are under 64. what is the mean and standard deviation of the distribution.

UNIT-V

5. Calculate the coefficient of correlation between x and y using the following data.

x	1	2	3	4	5	6	7	8	9
y	9	8	10	12	11	13	14	16	15

OR

Show that the following data are uncorrelated-

x	1	2	3	4	5
y	5	4	3	2	6

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IV-062

Roll No. 11501040002 Total Printed Pages : 2

04BCS/ICS106

B.TECH.COMPUTER SCIENCE & ENGG.

IV- SEM Examination, May/June - 2017

SUB : ANALOG AND DIGITAL COMMUNICATION

Time : 3 Hours] **[Total Marks 60**

Use of following supporting material is permitted during examination.

1. Nil 2. Nil

Note: 1. Attempt any five questions.

2. Each question carry equal marks.

1. Explain the different methods of generation of SSB signal.
2. When the modulating frequency in an FM system is 400Hz and the modulating voltage is2.4v the modulation index is 60. calculate the maximum deviation.
3. Explain the working of pulse code modulation define the signal to quantization noise ration in PCM.
4. Determine error probability in PCM system.

5. Calculate the error probability for QPSK technique.

6. Explain generation and reception of FSK signal.

7. prove that

$H(x,y) = H(x/y) + H(y)$

$H(x,y) = H(y/x) + H(x)$

8. Explain in brief principle of light communication in fiber cable.

9. The parity check matrix of a (7,4). Hamming code is given as follows

$$H = \left[\begin{array}{ccccccc} 1 & 1 & 1 & 0 & : & 1 & 0 & 0 \\ 0 & 1 & 1 & 1 & : & 0 & 1 & 0 \\ 1 & 1 & 0 & 1 & : & 0 & 0 & 1 \end{array}\right]_{3\times 7}$$

Calculate the syndrome vector for single bit errors.

10. Contract a systematic (7,4) cyclic code using the generator polynomial- $g(x) = x^3+x+1$. What are the error correcting capabilities of this code? Construct the decoding table and for the received code word 1101100, determine the transmitted data word.