G 1553 (Pages : 2) Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, MAY 2015

Fourth Semester

Branch : Electrical and Electronics Engineering

EE 010 405—DIGITAL SYSTEMS AND COMPUTER ORGANISATION (EE)

(New Scheme—2010 Admission onwards)

[Regular/Improvement/Supplementary]

Time : Three Hours Maximum : 100 Marks

Part A

Answer **all** *questions.*
Each question carries 3 *marks.*

1. Define the terms : Fan In and Fan Out.
2. What are Asynchronous Inputs ?
3. What is a shift Register ?
4. What are serial Adders ?
5. Explain Cache hit and Cache miss.

(5 × 3 = 15 marks)

Part B

Answer **all** *questions.*
Each question carries 5 *marks.*

6. Compare combinational and sequential circuits.
7. Discuss the disadvantages of Ripple counters.
8. Explain the operation of a Ring Counter.
9. Write the advantages of Parallel Adders.
10. Explain Virtual memory.

(5 × 5 = 25 marks)

Part C

Answer **all** *questions.*
Each full question carries 12 *marks.*

11. Explain with a figure, the operation of a TTL NAND circuit.

Or

Turn over

12. Minimise the 4 variable logic function using Kmap.

$f(A, B, C, D) = \Sigma_m\ (0, 1, 2, 3, 5, 7, 8, 9, 11, 14)$

Realise the function using NAND gate.

13. Explain a Mod 10 ripple counter with a neat figure.

Or

14. (a) What is Race around condition ? (3 marks)

(b) Explain with a figure, using gates, how JK flipflop can be converted to T flip flop. (9 marks)

15. Explain Universal shift Register with a neat figure.

Or

16. Design a mod 12 synchronous counter.

17. (a) Discuss the steps to design a logic unit. (6 marks)

(b) Explain 1 stage ALU. (6 marks)

Or

18. (a) Draw the block diagram of a Processor and explain in detail. (6 marks)

(b) Explain the processor Bus structures. (6 marks)

19. (a) Discuss the principles and Organization of static and Dynamic RAM cells. (7 marks)

(b) Explain the principle of memory Interleasing. (5 marks)

Or

20. (a) Explain USB with a block diagram.

(b) Explain SCSI.

[5 × 12 = 60 marks]

G 1565 (Pages : 2) Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, MAY 2015

Fourth Semester

Branch : Electrical and Electronics Engineering

EE 010 406—COMPUTER PROGRAMMING (EE)

(New Scheme—2010 Admission onwards)

[Regular/Improvement/Supplementary]

Time : Three Hours Maximum : 100 Marks

Draw neat flow charts for the programs.
Write neat and efficient C programs wherever needed.

Part A

Answer **all** *questions.*
Each question carries 3 *marks.*

1. Mention any *three* keywords and give their meanings.
2. What are the differences between "While" and "do-while" statements ?
3. Find if there is any error in the following code ?

   int * p = & 144 ;
4. How does a structure differ from an array ?
5. What is a binary file ? Where is it used ?

(5 × 3 = 15 marks)

Part B

Answer **all** *questions.*
Each question carries 5 *marks.*

6. With examples, explain :
   (i) if - else ;
   (ii) switch.
7. Write a statement to create 3 × 3 array and assign a value 1 to the elements of the first row, 2 to the elements of second row and 3 to the elements of third row.
8. With the help of examples, explain accessing a variable through its pointer.
9. With an example, give the general syntax of the Union.
10. Describe two different approaches to update a data file. Which is better ? Why ?

(5 × 5 = 25 marks)

Turn over

Part C

Answer **all** *questions.*
Each question carries 12 *marks.*

11. (a) Explain the precedence and associativity of operators in C.

    (b) Describe the Library functions available in C.

Or

12. Write a C program to determine and print all the two-digit Phythagorean triplets. (A phythagorean triplet is a set of three integer numbers i, j, k such that $i^2 + j^2 = k^2$.

13. Write a program to accept a matrix and determine whether it is a symmetric matrix.

Or

14. Write a program to sort and print the names of 72 students of a class in alphabetic order.

15. Write a function that takes a string as an argument and return its length as output, without using library functions.

Or

16. Using Pointers, write a program to find the largest of N integers.

17. Write a C program to read the details of employees working in a company. The details include name, employee number, age, date of joining, designation and salary. Make use of a structure to develop the program.

Or

18. Explain three dynamic memory allocation functions. What is singly linked list and doubly linked list ? Explain.

19. Write a program to copy one file to another, while doing so, replace all the lower case letters to their equivalent uppercase letters.

Or

20. Write a C program to find the square and cube of an integer using macro.

(5 × 12 = 60 marks)

G 1603 (Pages : 2) Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, MAY 2015

Fourth Semester

Branch : Electrical and Electronics Engineering

COMPUTER PROGRAMMING (E)

(Old Scheme—Prior to 2010 Admissions)

[Supplementary/Mercy Chance]

Time : Three Hours Maximum : 100 Marks

Write neat and efficient C-Programs wherever needed.

Part A

Answer **all** *questions.*
Each question carries 4 *marks.*

1. What is the purpose of a type declaration ? What does a type declaration consist of ? Give examples.
2. Write syntax of conditional operator and give an example.
3. What are the similarities and differences between global and local variables ?
4. What is the need of "break" and "continue" statements ? Give examples.
5. Write a statement to create 3 × 3 array and assign a value 1 to the elements of the first row, 2 to the elements of second row and 4 to the elements of third row.
6. Explain with examples, how will you initialise character arrays.
7. With the help of an example, explain accessing a variable through its pointer.
8. How can a function return a pointer to its calling routine.
9. What is a macro and how it is different from a C variable name ?
10. What are the differences between text files and binary files ?

(10 × 4 = 40 marks)

Part B

Answer **all** *questions.*
Each full question carries 12 *marks.*

11. (a) What is a constant ? Explain the categories of constants with their syntax and examples. (5 marks)

    (b) What is the significance of declaring a constant unsigned ? (2 marks)

    (c) What are the different ways to declare a C constant ? Give examples and explain. (5 marks)

Or

Turn over

12. Write C program, to accept an integer in the range 1 to 12 and print the name of the month, using "switch". (*e.g.* if the number is 3, March is to be printed.

13. Write a C program to convert the number of days to months and days.

Or

14. Give the coordinates (x, y) of 20 points, write a program which will output the coordinates of all points which lie inside, or on the circle with unit radius with centre at (0, 0).

15. Write a function to sort a set of n numbers in descending order of their magnitude.

Or

16. Write a C program to accept a sentence and convert all the lowercase characters of upper case and vice versa.

17. Write a function using pointers to multiply two matrices and to return the resulting matrix to the calling function.

Or

18. A student of master file consists of the register number, name and marks in six subjects. Write a C program which will read the file and print a list of students who have failed in one or more subjects. Assume 50% is required for a pass in each subject.

19. Write a C program that will receive a file name and a line of text as command line arguments and write the text to the file.

Or

20. Write a C program to read the details of the employeers working in a company. The details include name, employer number, age, date of joining, designation and salary. Prepare a print out of the roll, in the ascending order of the salary, making use of structure.

[5 × 12 = 60 marks]