



MS – 314

**II Semester B.A./ B.Sc. Examination, May/June 2014**  
**(Semester Scheme)**  
**COMPUTER SCIENCE – II**  
**Logic Design and Programming In Unix**  
**(2013 -14 and Onwards Students only) (Freshers only)**

Time : 3 Hours

Max. Marks : 70

**Instructions :** Answer all questions.

**SECTION – A**

Answer any ten questions. Each question carries two marks.

**(10×2=20)**

1. Convert  $59.625_{(10)} = (\text{_____})_2$
2. Explain excess – 3 code with an example.
3. Convert the binary number 101101 to Gray code.
4. What is a logic gate ? Name the three basic gates.
5. How does a user login into unix ? Give an example.
6. Write any two features of unix operating system.
7. Define a wild card. Why are they used ?
8. What is an inode ?
9. What is the function of cat command ? Explain with an example.
10. What is a filter ? Give an example.
11. Give the usage of grep in unix.
12. Explain any one built-in function in awk.

**SECTION – B**

Answer all the questions. Each question carries ten marks.

**(5×10=50)**

13. a) i) Prove that  $x.(x+y) = x$  by truth table method.  
ii) Simplify the following Boolean expressions.

1)  $AB + AB' + A'C + A'C'$       2)  $(x+y) (x+z)$ .

**(4+6)**

OR

P.T.O.



- b) i) Draw the circuit diagram for the Boolean function  $F(x, y, z) = (x' + y)(y' + z)$
- ii) Explain the logic circuit for a half adder along with the truth table. (3+7)
- 14. a) i) State and prove De Morgan's Laws.
- ii) Write any ten Boolean postulates. (5+5)

OR

- b) i) Solve the Boolean expression using K-Map.  
 $x'yz' + xy'z' + xyz' + xyz$
  - ii) Subtract 11 from 15 using 2's complementation.
  - iii) Define the terms
    - 1) Sum term and (2) Max term.
- Give example to each. (3+3+4)

- 15. a) i) Explain the system architecture of unix operating system with a neat diagram.
- ii) Explain the structure of super block. (7+3)

OR

- b) i) What are the different modes of setting file permissions ? Explain with examples.
  - ii) What is the command for each of the following tasks ? Explain with an example to each.
 

1) Delete a file	2) Create empty files
3) Making directory	4) Present working directory.
- (6+4)

- 16. a) i) Explain the different states of a process with a neat diagram.
  - ii) Explain the following commands.
 

1) Cut	2) Paste	3) Sort.
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- (7+3)

OR

- b) i) Write a note on vi editor.
- ii) What is the function of unlimit command ?
- iii) Explain background process. (5+2+3)

- 17. a) i) Describe the features of a shell script.
- ii) Write a shell script to find the GCD and LCM of two numbers. (5+5)

OR

- b) i) Explain the various looping control structures used in unix with example.
- ii) Write the structure of an awk script and explain the sections. (7+3)