

M. SC. (I.T.) SEM. – I (C.B.C.S. COURSE) (2015 COURSE) :

WINTER - 2017

SUBJECT: SYSTEM AND NETWORKING CONCEPTS

Day: Friday
Date: 15/12/2017

Time: 10.00 AM TO 01.00 PM
Max. Marks: 60

W-2017-0913

N.B:

- 1) Attempt **ANY SIX** questions.
 - 2) Figures to the right indicate **FULL** marks.
 - 3) Draw neat diagrams **WHEREVER** necessary
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- Q.1** Compare the OSI reference model with the TCP/IP protocol stack with illustrative diagrams. **(10)**
- Q.2** An IT organization is given the IPv4 address block of 130.15.0.0 The organization needs to divide the address space among 14 technical departments, each needing a maximum of 500 hosts. Determine the appropriate IPv4 address allocation with a detailed plan. **(10)**
- Q.3** Describe in detail the 3-way handshake protocol used by TCP/IP to establish a connection, with illustrative diagram. **(10)**
- Q.4** Describe the functions of the following Network components: - **(10)**
i) Wireless Access Point ii) Switch
iii) Router iv) Hub v) Gate way
- Q.5** Define 'Virtual memory'. Describe the memory operations between virtual and physical memory, with illustrative diagram. **(10)**
- Q.6** Explain ANY THREE scheduling algorithms available in any general purpose OS. Describe the pros and cons for each of your mentioned algorithms. **(10)**
- Q.7** Describe the various file permissions and categories in a Linux OS. Also explain the following terms **(10)**
i) inode number ii) Hard link iii) Soft Link
- Q.8** Compare the features of following file system formats in an operating system. **(10)**
i) NTFS ii) FAT iii) EXT
Describe with appropriate examples.