M.Phil 1st Semester Examination, 2019

COMPUTER SCIENCE

[Elective-I]

PAPER – COS-113

Full Marks : 50

Time : 2 hours

The figures in the right hand margin indicate marks

Candidates are required to give their answers in their own words as far as practicable

Write the answers to questions of each Paper in separate books wherever necessary

(*Mobile Computing*)

Answer any **four** questions

1. What are the characteristics of a Mobile Computing Environment ? What are the essential difference between 1st generation, 2nd and 3rd generation of network. 5 + 5

2. What is multiple access ? Why it is important ? Explain ALOHA and CSMA/CD. 1 + 1 + 4 + 4

3. What are the design issues in various components of a cellular system ? What is meant by cell splitting ? How does cell splitting affect the system design. 5 + 5

4. Describe GSM Architecture. Describe the different elements in this architecture. 4 + 6

5. What are the major parts of an MS in GSM ? Explain what are the different protocols used in GSM. 2 + 4 + 4

6. Write short notes on (any *two*) : 5 × 2

   (*i*) MANET

   (*ii*) TCP

   (*iii*) DHCP

   (iv) MAC.

[*Internal Assessment* — 10 Marks]

(*Advanced Computer Network*)

GROUP–A

1. Answer any *five* questions : 2×5

(*a*) State the advantages of IPV6 over IPV4.

(*b*) What is inverse TDM ?

(*c*) Explain the terms : bridging and routing.

(*d*) What is piggybacking ?

(*e*) Why subnet mask is used ?

(*f*) What is virtual circuit subnet ?

(*g*) Explain the function of a token ring.

GROUP–B

2. Answer any *four* questions : 5×4

(*a*) How CSMA provides an improvement over ALOHA ?

(*b*) Explain the working mechanism of Network Address Translation (NAT).

(*c*) With a suitable example, describe how OSPF routing algorithm works.

(*d*) Briefly describe the frame format of HDLC U-frame.

(*e*) Why the size of the sliding window should not exceed 2^{m-1} for selective repeat ARQ ?

(*f*) Explain the working mechanism of two way handshaking method.

GROUP–C

3. Answer any *one* question : 10×1

(*a*) Using suitable diagrams briefly describe IEEE 802.11 architecture. 10

(*b*) Write short notes on : 5×2

(*i*) ARP

(*ii*) Public and private key.

[*Internal Assessment* – 10 Marks]