17662

21718

3 Hours / 100 Marks Seat No. | | | | | | | | |

Instructions : *(1)* ***All*** *questions are* ***compulsory****.*
(2) Answer ***each*** *next main question on a* ***new*** *page.*
(3) Illustrate your answers with neat sketches ***wherever*** *necessary.*
(4) Figures to the ***right*** *indicate* ***full*** *marks.*
(5) Assume suitable data, if ***necessary****.*
(6) Use of Non-programmable Electronic Pocket Calculator is ***permissible****.*
(7) Mobile Phone, Pager and any other Electronic Communication devices are ***not*** *permissible in Examination Hall.*

Marks

1. A) Attempt **any three**: **12**

a) Define data transmission rate. How it is calculated ? List its unit. **4**

b) Explain asynchronous communication mode with suitable diagram. **4**

c) List IP address classes. Explain any two. **4**

d) Define following terms : **4**

1) Delay distortion
2) Attenuation
3) Noise
4) Error.

B) Attempt **any one**: **6**

a) Enlist different light sources used for Fiber Optic Communication. Describe any one in detail. **6**

b) With the neat diagram explain ESS and BSS. How they are differ from each other. **6**

2. Attempt **any two**: **16**

a) Explain LRC and VRC for error detection. **8**

b) Draw and explain the block diagram of fiber optic communication. State two light sources and two light detectors. **8**

c) Describe ATM with respect to switching mode, packet size, ATM cells and ATM layer. **8**

P.T.O.

Marks

3. Attempt **any four**: **16**

a) Explain encoder and decoder. **4**

b) Explain the terms scramble and unscramble. **4**

c) How ARR works ? Explain with neat diagram. **4**

d) Explain CRC with example. **4**

e) Explain synchronous communication mode with suitable diagram. **4**

f) Compare TDM and FDM. **4**

4. A) Attempt **any three**: **12**

a) Define modulation, demodulation, bandwidth and data rate. **4**

b) Explain the concept of FHSS. Give its advantages (any two advantages). **4**

c) Name the different types of fiber cable losses and explain any two of them. **4**

d) Explain the concept of parity check using example. What types of error cannot be detected by this method. **4**

B) Attempt **any one**: **6**

a) Explain FTP protocol and state its applications. **6**

b) Explain data transmission models with any suitable example. **6**

5. Attempt **any two**: **16**

a) Explain serial and parallel communication with its two advantages and disadvantages. **8**

b) Explain TCP/IP layer architecture with neat sketch. **8**

c) Describe Bluetooth architecture with respect to two types :

1) Piconet

2) Scatternet. **8**

6. Attempt **any four**: **16**

a) List any two advantages and disadvantages of fiber optic cable. **4**

b) List and describe ethernet properties. **4**

c) Draw and explain the neat construction of optical fiber cable. **4**

d) Define the following terms : **4**

1) Reflection 2) Refraction

3) Critical angle 4) Refractive index.

e) Explain the stop and wait mechanism with example. **4**

f) Explain ICMP protocol. **4**