PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BCA DEGREE EXAMINATION DECEMBER 2022
(Third Semester)

Branch – COMPUTER APPLICATIONS

DATA COMMUNICATIONS AND NETWORKING

Time: Three Hours   Maximum: 50 Marks

SECTION-A (5 Marks)
Answer ALL questions
ALL questions carry EQUAL marks   (5 x 1 = 5)

1. Which of the following characteristics refers to the variation in the packet arrival time?
   - (i) Delivery
   - (ii) Accuracy
   - (iii) Timeliness
   - (iv) Jitter

2. Which wave is used for short-range communications?
   - (i) Radio waves
   - (ii) Microwaves
   - (iii) Infrared waves
   - (iv) Ground waves

3. Choose the protocol in which, if no acknowledgement for a frame has arrived, we resend all outstanding frames.
   - (i) Stop-and-Wait ARQ
   - (ii) Go-Back N ARQ
   - (iii) Selective Repeat ARQ
   - (iv) Selective N ARQ

4. A Bluetooth network consists of _____ primary device(s) and up to ____ secondary devices.
   - (i) One; Five
   - (ii) Five; Three
   - (iii) Two; Six
   - (iv) One; Seven

5. In which of the following connection, one TCP connection is made for each request/response?
   - (i) Persistent
   - (ii) Non-persistent
   - (iii) Static
   - (iv) Dynamic

SECTION - B (15 Marks)
Answer ALL Questions
ALL Questions Carry EQUAL Marks   (5 x 3 = 15)

6 a Describe the components of data communication system.

OR

   b Narrate the protocol layered architecture.

7 a Outline the Quality of Service metrics used to measure the network performance.

OR

   b Compare and contrast circuit switched network and packet switched network.

8   a   Outline the influence of block coding in error correction.

OR

    b   Show the process of CSMA/CD with a neat flow diagram.

9   a   Describe the services offered by network layer.

OR

    b   Summarize the features of TCP in detail.

10 a   Describe about Uniform Resource Locator with example.

OR

    b   Compare Non persistent versus Persistent connection in HTTP

SECTION -C (30 Marks)
Answer ALL questions
ALL questions carry EQUAL Marks   (5 x 6 = 30)

11 a Sketch the functions of OSI layers with a neat diagram.

OR

   b Examine the different categories of network in detail.

12 a Highlight the advantages of optical fiber over twisted pair and coaxial cable.

OR

   b Discuss about unguided transmission media detail.

13 a Compare the working mechanism of Go-back N ARQ protocol with Selective Repeat ARQ protocol.

OR

   b Discuss the architecture of Bluetooth in detail.

14 a Enumerate the five categories of connecting devices.

OR

   b Sketch the format of IPV6 datagram.

15 a Explain the architecture of E-mail in detail.

OR

   b How TCP/IP uses DNS client and DNS server to map a name to an address.

Z-Z-Z   **END**