BIRLA INSTITUTE OF TECHNOLOGY
MESRA – 835215, RANCHI, INDIA

UG

Name: ……………………………………………. Roll No.: …………………………………………..

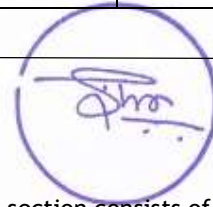Branch: ……………………………………………. Signature of Invigilator: ……………………

Semester: VIth   Date: 02/05/2022 (MORNING)

Subject with Code: **EC369 WIRELESS NETWORKS**

Marks Obtained	Section A (30)	Section B (20)	Total Marks (50)

INSTRUCTION TO CANDIDATE

1. The booklet (question paper cum answer sheet) consists of two sections. First section consists of MCQs of 30 marks. Candidates may mark the correct answer in the space provided / may also write answers in the answer sheet provided. The Second section of question paper consists of subjective questions of 20 marks. The candidates may write the answers for these questions in the answer sheets provided with the question booklet.

2. The booklet will be distributed to the candidates before 05 minutes of the examination. **Candidates should write their roll no. in each page of the booklet.**

3. Place the Student ID card, Registration Slip and No Dues Clearance (if applicable) on your desk. All the entries on the cover page must be filled at the specified space.

4. Carrying or using of mobile phone / any electronic gadgets (except regular scientific calculator)/chits are strictly prohibited inside the examination hall as it comes under the category of unfair means.

5. No candidate should be allowed to enter the examination hall later than 10 minutes after the commencement of examination. Candidates are not allowed to go out of the examination hall/room during the first 30 minutes and last 10 minutes of the examination.

6. Write on both side of the leaf and use pens with same ink.

7. The medium of examination is English. Answer book written in language other than English is liable to be rejected.

8. All attached sheets such as graph papers, drawing sheets etc. should be properly folded to the size of the answer book and tagged with the answer book by the candidate at least 05 minutes before the end of examination.

9. The door of examination hall will be closed 10 minutes before the end of examination. Do not leave the examination hall until the invigilators instruct you to do so.

10. Always maintain the highest level of integrity. Remember you are a BITian.

11. Candidates need to **submit the question paper cum answer sheets before leaving the examination hall**.

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)

CLASS: B. TECH   SEMESTER : VI
BRANCH: ECE   SESSION: SP22

SUBJECT: EC 369 WIRELESS NETWORKS

TIME: 2 HRS   FULL MARKS: 50

INSTRUCTIONS:
1. This question paper contains Section A of 30 marks and Section B of 20 marks.
2. Section A contains 30 MCQ, each of 1 mark.
3. Section B contains 4 questions, each of 5 marks.
3. All questions are compulsory.
3. The missing data, if any, may be assumed suitably.
4. Before attempting the question paper be sure that you have got the correct question paper.

Section A

1.   A piconet consists of a master and a maximum of up to -------------------------- slaves.
      A.   7
      B.   8
      C.   11
      D.   15

2.   Before any device enters a piconet, it is considered to remain in -----------------------
      A.   Sniff mode
      B.   Standby mode
      C.   Power saving mode
      D.   Park mode

3.   UWB operates over a frequency range from -----------------------to -----------------------
      A.   3.1 MHz to 10.6 MHz.
      B.   2.4 GHz to 2.4835 GHz
      C.   3.1 GHz to 10.6 GHz.
      D.   2.4 MHz to 2.4835 MHz

4.   The family of standards to address the need of very short-range communication and networking to offer convenience, flexibility and mobility is known as -------------------
      A.   IEEE 802.15.1
      B.   IEEE 802.15.3
      C.   IEEE 802.15.4
      D.   Non of the above

5.   IEEE 802.15.2 corresponds to
      A.   Bluetooth
      B.   UWB
      C.   ZigBee
      D.   Non of the above

6. Bluetooth became visible in the year

   A. 2000
   B. 2001
   C. 2002
   D. 2003

7. WLAN with an Access point is an example of an --------------------------based network.

   A. Infrastructure less network
   B. Infrastructure based network
   C. Wireless adhoc network
   D. Mobile adhoc network

8. The smallest building block of a WLAN is called ---

   A. Piconet
   B. Scatternet
   C. Basic Service Set
   D. Primary Service Set

9. The two basic functions performed by Distribution system in WLAN are --------

   A. Coordination and integration
   B. Distribution and integration.
   C. Distribution and Coordination
   D. Distribution and authentication

10. GPRS stands for

   A. Global Packet Radio Services
   B. General Packet Radio Services
   C. General Purpose Radio Services
   D. GSM packet Radio System

11. HSCSD stands for

   A. High speed cellular system data
   B. High scale circuit switched data
   C. High speed circuit switched data
   D. High scale cellular system data

12. 2G mobile cellular systems evolved, which were mostly deployed in

   A. Early 1980s
   B. Late 1980s
   C. Early 1990s.
   D. Late 1990s

13. MMS (multimedia messaging) became possible with

   A. 2 G Services
   B. 2.5 G services.
   C. 3 G Services
   D. 3.5 G services.

14. IMT-2000 (international mobile telecommunications beyond-2000) corresponds to
    A. 2G
    B. 2.5G
    C. 3G
    D. 3.9G

15. GSM (global system for mobile communication) uses following hybrid multiple access Technique
    A.   TDMA/FHMA
    B.   FDMA/TDMA
    C.   TDMA/FDMA
    D.   FDMA/CDMA

16. The modulation scheme used in infrared transmission is known as---------
    A. 64-QAM Modulation
    B. BPSK Modulation
    C. QPSK Modulation
    D. Intensity Modulation

17. RTS/CTS is an acronym for
    A. Return to Send/Collect to Send
    B. Request to Send/ Clear to Send
    C. Repeat Transmit Sequence/Clear Transmit Sequence
    D. None of these

18. Which of the following frequency bands are unlicensed?
    A. UNII Band
    B. UMII Band
    C. IISM Band
    D. GSM Band

19. The modulation scheme and channel bandwidth used in GSM are------
    A. BPSK and 30 KHz
    B. QPSK and 200 KHz
    C. GMSK and 200 KHz
    D. GFSK and 200 MHz

20. The sub systems in GSM architecture are

    A. MSS, BSS, NSS and OSS
    B. MSS, BSS, NSS and MSS
    C. UE, BTS, BSC, MSC
    D. MS, BTS, BSC, MSC

21. Choose the correct statement (s)

    A. Bluetooth devices form two types of networks, called piconet and scatternet.
    B. Two or more piconets form a scatternet.
    C. Master communicates with slaves in round robin fashion.
    D. All of the above

22. Choose the incorrect statement regarding wired and wireless LAN
    A. Wired LAN supports very high data rate and very low error rate.
    B. WLAN can support much lower data rate and incurs high error rate.
    C. WLAN is much more prone to security threats compared to wired LAN.
    D. Wired LAN is much more prone to security threats compared to wireless LAN.

State True or False

23. In a MANET, the nodes forming the network are free to move and reorganize themselves in a predetermined manner.
    A.   True
    B.   False

24. The decentralized architecture of MANET provides robustness against single point failure.
    A.   True
    B.   False

25. Availability ensures availability of the proof of transmission and reception of any information, so that a user cannot deny the possibility of having transmitted or received the information.

    A.   True
    B.   False

26. Confidentiality implies protection against change in data by unauthorized users. The content of the information should only be changed by authorized users.

    A.   True
    B.   False

27. 1G provides voice communication and small amount of data services.
    A.   True
    B.   False

28. 1G and 2G both use circuit switched technology.

    A.   True
    B.   False

29. WCDMA and cdma2000, both use CDMA technology, and hence are compatible to each other.
    A.   True
    B.   False

30. GPRS stands for General Packet Radio System.
    A.   True
    B.   False

Section B

1. Explain different types of network configurations offered by Bluetooth. Use diagrams to explain.
2. Compare Adhoc versus Infrastructure based Wireless Networks. Use diagrams to explain your concept.
3. Draw a block diagram and explain the GSM system architecture.
4. Discuss the merits and demerits of Wireless Adhoc Networks.

-------xxx------