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MONASH University

Semester One 2018
Sample Examination Paper

Faculty of Information Technology

EXAM CODES: **FIT3165**

TITLE OF PAPER: **COMPUTER NETWORKS – PAPER 1**

EXAM DURATION: 2 hours writing time

READING TIME: 10 minutes

THIS PAPER IS FOR STUDENTS STUDYING AT: (tick where applicable)

☐ Caulfield ☑ Clayton ☐ Parkville ☐ Peninsula
☐ Monash Extension ☐ Off Campus Learning ☐ Malaysia ☑ Sth Africa
☐ Other (specify)

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AUTHORISED MATERIALS

OPEN BOOK	☐ YES	☑ NO
CALCULATORS	☑ YES	☐ NO
SPECIFICALLY PERMITTED ITEMS	☐ YES	☑ NO

if yes, items permitted are:

INSTRUCTIONS
1. The FIT3031 exam consists of **2 parts**.
2. Part 1 consists of **FIVE** questions; please answer **ALL** questions in the exam script book
3. Total marks - 100. This exam contributes 60% to your result for this unit.

Candidates must complete this section if required to write answers within this paper

STUDENT ID: __ __ __ __ __ __ __ __ __ __ __   DESK NUMBER: __ __ __ __ __

FIT3031 Exam Part 2 (40 marks)

II SAMPLE MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question. (40 marks)

1) Which of the following is true with respect to the data link layer?

    a. It accepts streams of bits from the application layer.

    b. It is responsible for getting a message from one computer to another (one node to another) without errors.

    c. It does not perform error detection.

    d. It performs routing functions.

    e. It organizes data from the physical layer and passes these coherent messages to the application layer.

2) Multiplexing is the process of,

    a. Merging multiple digital or analog signals into a composite baseband signal.

    b. Decomposing a composite data stream into its digital or analog components.

    c. Fourier transformation of analog signals into digital wave forms.

    d. All of the above.

    e. None of the above.

3) Wavelength Division Multiplexing is a form of,

    a. TDM.

    b. FDM.

    c. STDM.

    d. None of the above.

4) Encoding and decoding of LAN signals is done at which of the following OSI layers?,

    a. Transport layer.

    b. Physical layer.

    c. Data link layer.

    d. None of the above.

5) The way in which the network end device, or stations, are attached to the network is termed as,

    a. Wiring layout.

    b. Wiring design.

    c. Topology.

    d. None of the above.

6) Which of the following is a valid reason for fragmentation?

    a. Smaller sized packets have lower overheads.

    b. Smaller sized packets are easier to process.

    c. Smaller sized packet may improve error control.

    d. Smaller sized packets travel at higher propagation speeds.

7) The transport-layer packet in the TCP/IP protocol suite is called

    a. a message

    b. a datagram

    c. **a segment or a user datagram**

    d.   a frame

8) In the TCP/IP protocol suite, the _____ layer is responsible for moving frames from one hop (node) to the next.

    a.   physical

    b. **data link**

    c.   transport

    d.   network

9) In the TCP/IP protocol suite, a logical address is the identifier at the _____.

    a. **network layer**

    b.   transport layer

    c.   data-link layer

    d.   application layer

10) The application layer in the TCP/IP protocol suite is usually considered to be the combination of _____ layers in the OSI model

    a. **application, presentation, and session**

    b.   application, transport, and network

    c.   application, data-link, and physical

    d.   network, data-link, and physical

11) HTTP uses the services of _____.

    a.   UDP

    b.   IP

    c. **TCP**

    d.   DNS

12) A client program normally uses _____ port number. A server program normally uses _____ port number.

    a.   a well-known; an ephemeral

    b. **an ephemeral; a well-known**

    c.   a private; a well-known

    d.   None of the choices are correct

13) UDP is a _____ transport protocol.

    a.   connectionless, reliable

    b.   connection-oriented, unreliable

    c. **connectionless, unreliable**

    d.   None of the choices are correct

14) At the transport layer, to define the processes, we need two identifiers called _____.

    a.   logical addresses

    b.   physical addresses

    c.   port addresses

    d. **None of the choices are correct**

15) The ports ranging from 0 to 1,023 are called the _____ ports. The ports ranging from 1,024 to 49,151 are called _____ ports. The ports ranging from 49,152 to 65,535 are called the _____ ports.

    a. **well-known; registered; dynamic or private**

    b.   registered; dynamic or private; well-known

    c.   private or dynamic; well-known; registered

    d.   private or dynamic; registered; well-known

16) UDP packets have a fixed-size header of _____ bytes.
    a. 16
    b. 8
    c. 40
    d. 32

17) TCP groups a number of bytes together into a packet called a _____.
    a. bytes, user datagram
    b. bytes, segment
    c. messages, datagram
    d. messages, segment

18) Communication in TCP is _____.
    a. simplex
    b. half-duplex
    c. full-duplex
    d. None of the choices are correct

19) The inclusion of the checksum in the TCP segment is _____.
    a. optional
    b. mandatory
    c. depends on the type of data
    d. None of the choices are correct

20) In TCP, a SYN + ACK segment consumes _____ sequence numbers.
    a. no
    b. three
    c. two
    d. one

21) In TCP, an ACK segment, if carrying no data, consumes _____ sequence number(s).
    a. no
    b. one
    c. two
    d. None of the choices are correct

22) _____ control refers to the mechanisms and techniques to keep the load below the capacity.
    a. flow
    b. error
    c. congestion
    d. None of the choices are correct

23) The performance of a network can be measured in terms of _____.
    a. delay
    b. throughput
    c. packet loss
    d. all of the choices are correct

24) The IP header size is _____ bytes long.
    a. 20 to 60
    b. 20
    c. 60
    d. None of the choices are correct

25) _____ allows a site to use a set of private addresses for internal communication and a set of global Internet addresses for communication with the rest of the world.
    a. DHCP
    b. NAT

c. IMCP
d. None of the choices are correct

26) Which error detection method involves polynomials?
   a. CRC
   b. Simple parity check
   c. Two-dimensional parity check
   d. Checksum

27) In the 1-persistent approach, when a station finds an idle line, it _____.
   a. sends immediately
   b. waits 0.1 s before sending
   c. waits 1 s before sending
   d. waits a time equal to (1 - p) seconds before sending

28) A _____ is a local address. Its jurisdiction is over a local network.
   a. link-layer address
   b. logical address
   c. port number
   d. None of the choices are correct

29) The _____ sublayer is responsible for the operation of the CSMA/CD access method and framing.

   a. LLC
   b. MII
   c. MAC
   d. None of the choices are correct,

30) Each station on an Ethernet network has a unique _____ address imprinted on its network interface card (NIC).
   a. 16-bit
   b. 32-bit
   c. 64-bit
   d. None of the choices are correct.

31) In the Ethernet frame, the _____ field contains error detection information.
   a. CRC
   b. preamble
   c. address
   d. SFD

32) A VLAN as a local area network configured by_____.
   a. software
   b. physical wiring
   c. software or physical wiring
   d. None of the choices are correct.

33) A repeater is a connecting device that operates in the _____ layer(s).
   a. physical
   b. physical and data link
   c. data link and network
   d. physical, data link and network

34) A link-layer switch is a connecting device that operates in the _____ layer(s).
   a. physical
   b. physical and data link
   c. data link and network

d. physical, data link and network

35) In IEEE 802.11, the _____ is a time period used for collision avoidance.
   a. **NAV**
   b. BSS
   c. ESS
   d. None of the choices are correct.

36) In IEEE 802.11, the addressing mechanism can include up to _____ addresses.
   a. **four**
   b. five
   c. six
   d. None of the choices are Correct.

37) _____ conversion involves three techniques: line coding, block coding, and scrambling.
   a. Analog-to-digital
   b. Digital-to-analog
   c. Analog-to-analog
   d. **Digital-to-digital**

38) Block coding can help in _____ and _____ at the receiver.
   a. **synchronization and error detection**
   b. synchronization and attenuation
   c. error detection and attenuation
   d. error detection and distortion

39) AM, FM, and PM are examples of _____ conversion.
   a. digital-to-digital
   b. digital-to-analog
   c. **analog-to-analog**
   d. analog-to-digital

40) Which multiplexing technique shifts each signal to a different carrier frequency?
   a. **FDM**
   b. TDM
   c. WDM
   d. PDM

Please work out all the tutorial questions similar to theoretical review questions and problem-based questions. Refer to all the Tutorials, & solutions

Important Disclaimer: Preparing for Your EXAM

It is advisable to complete your required preparation(s) as quickly as possible and be prepared at least 1 weeks before your exam. The sample exam and coverage can provide ONLY sample preparation materials to help you prepare for the exam. The Sample exam Questions above ARE NOT designed to provide you with all exam coverage for final exam assessment of your current skill levels, but to orient you to the style of question used in the actual final exam assessment. DO NOT treat the sample questions as the ONLY scope for your practice exam, or as the actual exam. The final Questions will vary considerably in their content, coverage and the level of difficulty.

Please note: Solutions are **NOT** provided to the sample exam questions.