**THE INSTITUTE OF
CHARTERED ACCOUNTANTS OF SRI LANKA**

**SCHOOL OF ACCOUNTING AND BUSINESS
BSc. (APPLIED ACCOUNTING) GENERAL/SPECIAL DEGREE
PROGRAMME**

YEAR I SEMESTER I (Intake IV- Group B)

END SEMESTER EXAMINATION – SEPTEMBER 2015

ICT10130Introduction to Information Technology

Date	:	25th September 2015
Time	:	5.30 p. m. – 8.30 p.m.
Duration	:	Three (03) hours

Instructions to Candidates:

- This paper consists of two parts (A and B)

- Part A – Answer **all** questions in the sheet provided

  Part B – Answer any **Two (2)** questions out of the Three (3) questions

- The total marks for the paper is 60.

- The marks for each question are shown in brackets.

- Answers should be written neatly and legibly.

Part A

Multiple Choice Questions

1. The world's first Electronic General Purpose computer was named as :

    a. Apple I

    b. ENIAC

    c. IBM XT

    d. Lenovo

2. Select the answer with the best matching pairs of time period (era) and the technology platforms :

a. 1970's	p. Web / Cloud based Systems
b. 1980's	q. Personal Computers (Micro Computers)
c. 1990's	r. Main Frames / Dumb Terminals
d. 2000's	s. Client Server Systems

    a. (a) – (q) | (b) – (r) | (c) – (s) | (d) – (p)

    b. (a) – (r) | (b) – (q) | (c) – (s) | (d) – (p)

    c. (a) – (s) | (b) – (q) | (c) – (p) | (d) – (r)

    d. (a) – (r) | (b) – (s) | (c) – (p) | (d) – (q)

3. Which of the following devices can be classified as both Input and Output Device :

    a. Touch Screen

    b. Keyboard

    c. Head Set

    d. Plotter

4. How would you represent the decimal value of 50 in Hexadecimal?

    a. 1E

    b. 50

    c. 32

    d. 11010

5. Which of the following is **NOT** a component of a Computer?

    a. Central Processing Unit (CPU)

    b. Memory

    c. Mass Storage

    d. Uninterrupted Power Supply (UPS)

6. How is data represented inside the computer?

    a. Logical System

    b. Byte System

    c. Binary System

    d. Hexadecimal System

7. Communication between computers is achieved by networking computers together using connecting devices and setting up of strict rules for communication to take place. These 'rules' are more appropriately termed as :

    a. Protocols

    b. Internet

    c. Standards

    d. Browser

8. Which of the following storage devices allows access to information only in a sequential mode?

    a. CD-R

    b. DVD

    c. Hard disk

    d. Magnetic tape

9. Testing a program for any syntax or logic errors is known as :

    a. Double checking

    b. Editing

    c. Debugging

    d. Decoding

10. In programming, converting high level language into machine language is done by :
    a. Drivers
    b. Service Programs
    c. Converters
    d. Translators / Compilers

11. FLOPS (an acronym for Floating-point Operations Per Second) is a measure of computer performance. Performance offastest Super Computers available today are measured in?
    a. Giga FLOPS
    b. Mega FLOPS
    c. Tera FLOPS
    d. Peta FLOPS

12. Current trends in the field of IT aim at providing wireless services to people while improving on the speed and storage space of existing computer systems. The term 'wireless services' means :
    a. Reduction in cost of computers
    b. Reduction in the size of computers
    c. Increase of the memory of the computer
    d. Without cables

13. In which category of computers do Desktop Computers, Notebooks (Laptops) and Tablets fall?
    a. Super Computers
    b. Mainframe Computers
    c. Mini Computers
    d. PersonalComputers

14. Which of the following Character Encoding can accommodate alphabets from multiple languages?
    a. ASCII
    b. EBCDIC
    c. Unicode
    d. Mandarin

15. Which of the following is **NOT** a function of the Operating System?
    a. Database management
    b. Process management
    c. Memory management
    d. Disk management

16. One of the following is **NOT** a use of ERPs :
    a. Product Planning and Costing
    b. Developing Business Strategy
    c. Customer Relationship Management
    d. Inventory Management

17. Which of the following devices has the largest share among Input Devices available in the Market at present?
    a. Key Boards
    b. Joy Sticks
    c. Mice
    d. Touch Screens

18. Which Software out of the following belongs to the Licensing Type – Open Source?
    a. MS Word
    b. Firefox
    c. Oracle
    d. Acrobat Reader

19. Which of the following Network Topology is easiest to expand?
    a. Mesh
    b. Bus
    c. Tree
    d. Ring

20. The US Technology giant Google is **NOT** known to do be involved in the one of the following areas of Science and Technology :
    a. Mobile Operating System - Android
    b. Video Streaming – Youtube
    c. Medicine – Virtual Doctor
    d. Internet Balloons – Loon Project

21. Which of the following Technologies is likely to be used for Cash less payments in buses in the near future in Sri Lanka?
    a. NFC (Near Field Communication)
    b. Visa Credit Cards
    c. Master Cards
    d. Dialog eZCash

22. Unidirectional Data Transmission is called _____.
    a. Simplex
    b. Duplex
    c. Half-Duplex
    d. None of these

23. It is the central command center of an Operating System. It is the part of the Operating System that loads first, and it remains in main memory.
    a. Task Manager
    b. CPU
    c. Memory Manager
    d. Kernel

24. The goal of Three-Schema architecture is to separate the user applications from physical Database. Which schema in the Three-Schema architecture represents the Entity-Relationships of theentire Database :
    a. External Schema
    b. Internal Schema
    c. Conceptual Schema
    d. Relational Schema

25. A _____ Database model is a data model in which the data is organized into a tree-like structure. The data is stored as records (in nodes) which are connected to one another through links. Each child node can have only one parent node.

    a. Network
    b. Relational
    c. Hierarchical
    d. Object Oriented

26. CREATE TABLE students

    stu_id INTEGER   PRIMARY KEY,
    first_name   VARCHAR(50)   NULL,
    last_name   VARCHAR(75)   NOT NULL,
    fname VARCHAR(50)   NOT NULL,
    course_id   DATE   NULL);

    The above SQL Statement belongs to:
    a. DDL
    b. DCL
    c. DML
    d. TCL

27. An equivalent representation for the Boolean expression Ā+ A + B is :
    a. B
    b. A
    c. 1
    d. Ā

28. A key disadvantage of Impact Printers is?
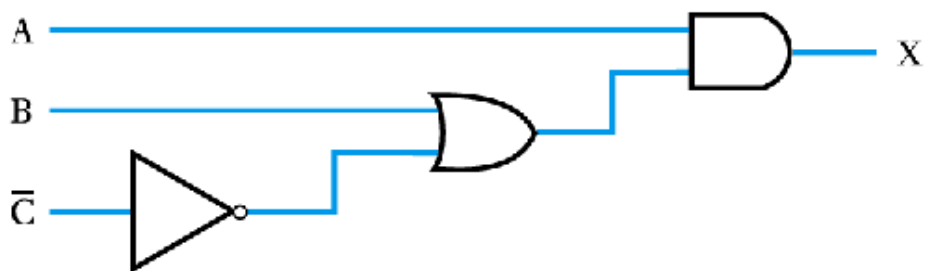   a. Cannot print multi-part forms
    b. Cannot withstand dusty environments
    c. Generally noisy
    d. Consumes a lot of power

29. Which logic gate has the following Truth Table?

Input	Input	Output
A	B	Y
0	0	0
0	1	0
1	0	0
1	1	1

   a. XOR (Exclusive OR)Gate

   b. OR Gate

   c. AND Gate

   d. NANDGate

30. What Boolean expression describes the output X of this arrangement?

   a. X = A + (B.C)

   b. X = A.(B + C)

   c. X = (A.B) + C

   d. X = A + B + C

31. _____provides three bytes to identify Network ID and leaves the remaining one byte available for Host ID.

   a. Class A

   b. Class B

   c. Class D

   d. Class C

32. Which of the following correctly lists different types of memory in the order of access speed – low to high?

   a. Hard Disk → Cache → CPU Registers → RAM
   b. Hard Disk → RAM → Cache → CPU Registers
   c. CPU Registers → RAM → Cache → Hard Disk
   d. RAM → CPU Registers → Cache → Hard Disk

33. Which of the following is **NOT** a stage in Database Access granting process?

   a. Identification
   b. Authentication
   c. Broadcasting
   d. Authorization

34. _____ provide a file-system interface where clients can create, update, read and delete files.

   a. Compute Server Systems
   b. Peer-to-peer Systems
   c. File Server Systems
   d. None of these

35. Which of the following is **NOT** a Switching Technique?

   a. Token Switching
   b. Circuit Switching
   c. Packet Switching
   d. Message Switching

36. Which of the following is not a layer in TCP/IP Suite?

   a. Application Layer
   b. Session Layer
   c. Data Link Layer
   d. Transport Layer

37. Which of the following is thenewer scheme of IP Addressing?

    a. IPv6

    b. IPv4

    c. IPv8

    d. None of these

38. Although many people still consider traditional universities as the best way to achieve knowledge and get a diploma, Online Learning proves to be a great alternative. But there are few inherent drawbacks in Online Education. One key inherent drawback is:

    a. Poor Video quality

    b. No face-to-face interaction

    c. Poor Audio quality

    d. Difficult to make friends

39. Select the answer with the correct order – low to high in terms of better structure and meaning of four the components mentioned:

    a. Knowledge → Wisdom → Data → Information

    b. Wisdom → Data → Information → Knowledge

    c. Data → Information → Wisdom → Knowledge

    d. Data → Information → Knowledge → Wisdom

40. There are two key modes of Data Transmission categorized based on the number of Bits that can be simultaneously transmitted by the communications channel. What are these two modes?

    a. Symmetrical vs Asymmetrical

    b. Synchronous vs Asynchronous

    c. Serial vs Parallel

    d. None of the above

Part B

Answer any **Two (2)** questions out of the **Three (3)** questions given.

Question No. 01

a. Operating System (commonly abbreviated as OS) is the software component of a computer system that is responsible for the management and coordination of activities and the management of the limited resources of the computer. In the context of managing limited resources briefly describe the following two techniques used by the Operating System:

    i.   Time Sharing

    ii.   Virtual Memory

(6 marks)

b. Many people use the terms Internet and World Wide Web (WWW), or just the Web, interchangeably, but the two terms are not synonymous. The Internet is made up of various services that provide functionality. It is a type of an infrastructure through which various services are facilitated. Apart from World Wide Web, list and describe four other services facilitated through the Internet.

(4 marks)

(Total 10 marks)

Question No. 02

a. Network Topology is the arrangement of the various elements (links, nodes, etc.) of a computer network. Essentially, it is the topological structure of a network and may be depicted physically or logically. List 4 main Network Topologies with diagrams depicting the physical arrangement of nodes.

(4 marks)

b. The OS is one of the most fundamental components of a computer. It plays an integral role in the computer operations, and is as important to know about as the computer itself. The purpose of an Operating System is to organize and control hardware and software so that the device it lives in behaves in a flexible but predictable way. List 6 of the core tasks / services of an Operating System:
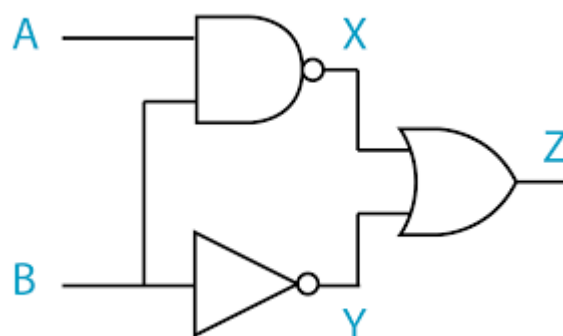
(6 marks)

(Total 10 marks)

Question No. 03

a. A Logic Gate is an elementary building block of a digital circuit. Most Logic Gates have two inputs and one output. There are three basic logic gates :

AND | OR | NOT

As shown in the following digital circuit, Logic gates can be combined together to perform certain Boolean Functions (Operations). Analyzing this determine the Boolean functions that it implements at the points X, Y and Z.

Eg: $\mathbf{X} = \overline{\mathbf{AB}}$

(4 marks)

b. A Truth Table is a breakdown of a Boolean function by listing all possible values the function can attain. Construct the Truth Table for the following Boolean function :

$$F(x, y, z) = x\overline{z} + y$$

(6 marks)