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BCS-11

BACHELOR OF COMPUTER APPLICATIONS (REVISED) (BCA)

Term-End Examination

December, 2021

BCS-011 : COMPUTER BASICS AND PC SOFTWARE

Time : 3 Hours *Maximum Marks : 100*

Weightage : 75%

Note : *Question* ***No. 1*** *is compulsory and carries 40 marks. Attempt any* ***three*** *questions from the rest.*

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1. (a) Convert the following numbers as asked : 5

   (i) Convert $(756)_{10}$ to an equivalent binary.

   (ii) Convert $(1.0125)_{10}$ to an equivalent binary.

   (iii) Convert $(10110111)_2$ to an equivalent decimal.

   (iv) Convert $(1011111111100111)_2$ to an equivalent hexadecimal.

   (v) Convert $(49AF)_{16}$ to an equivalent binary.

(b) Explain how the storage capacity and density of a disk can be calculated. A disk pack having a diameter of 3.0 inches has 5 plates (10 recording surfaces). It has 5000 tracks per surface with 128 sectors per track. Assuming that each sector can store 1 kB of data, calculate the storage capacity and storage density of the disk. 5

(c) Compare and contrast the following : 4

   (i) Impact printers and non-impact printers

   (ii) Analog monitor and digital monitor

(d) You bought a raw computer from the market. It has only the hardware and device drivers loaded in it. Which software is essentially to be loaded into this raw computer to make it usable ? Explain any ***four*** functions of this software. 5

(e) While using a programming language, you are required to process the following tabular data : 4

Column

		1	2	3
	1	25	30	15
Row	2	5	7	90
	3	5	9	20

(i) Which programming element will be used by you to process the table as given above ?

(ii) What will be the data type of each element ?

(iii) Which statement will be useful for repeat the processing task for the data above ?

(f) Given the value of $a = 7$ and $b = 9$, what will be the value of the following ? 4

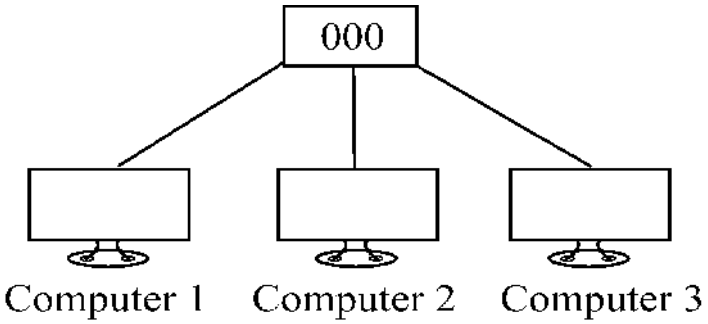
(i) $b\% a$;

(ii) b++;

(iii) $a > b$

(iv) $a < b \,||\, b < a$

(g) Identify the network topology shown in the following figure : 5



Explain the advantages and disadvantages of this topology.

(h) Given the following IP addresses and subnet masks. Identify the valid IP addresses and find Net_id for those IP addresses using subnet masks : 4

	IP address	Subnet mask
(i)	10.251.250.256	255.255.255.0
(ii)	172.16.20.5	255.240.0.0
(iii)	192.168.89.25	255.255.0.0
(iv)	192.168.75.25	255.255.255.0

(i) What is the need of a browser software ? List the names of 4-ineractions/buttons that should be present in a browser. Also list the names of ***two*** popular browsers. 4

2. (a) What is an instruction in a computer ? Explain with the help of an example. What are the different components of a CPU and what are their roles ? Which of these components interprets the instruction ? 7

(b) List at least ***three*** features of each of the following software : 6

(i) Spreadsheet

(ii) Database

(c) What is a LAN ? How is it different to WAN ? List the characteristics, advantages and disadvantages of LAN. 7

3. (a) Write an algorithm and draw the flow-chart to find the sum of first n natural numbers. 7

(b) List any ***six*** activities that are a part of an e-learning software. Also list advantages and disadvantages of e-learning. 6

(c) What is the purpose of use of main memory ? Explain the characteristics of RAM and ROM in this context. Also differentiate between SRAM and DRAM. 7

4. (a) Compare and contrast the features of the following data transmission channels : 6

   (i) Twisted pair cable and Optical fiber cable

   (ii) Radio waves and Microwaves

   (b) What is a port in the context of a computer ? Explain the use of serial port and USB port. 3

   (c) List the characteristics of any ***two*** input devices and any ***two*** output devices. 4

   (d) What is a Perverse Software ? What is the need of anti-virus software ? List any ***two*** techniques that can be used by anti-virus software to identify viruses. Also list the drawbacks of anti-virus software. 7

5. Explain any ***five*** of the following with the help of an example/diagram, if needed : 5×4=20

   (a) Client/server architecture

   (b) Open Source Software

   (c) Time sharing and multiprogramming systems

   (d) Collaborations

   (e) Folders in an e-mail software

   (f) ASCII and Unicode

   (g) Disk checker software