බණ්ඩාරනායක විද්‍යාලය
බණ්ඩාරනායක විද්‍යාලය
බණ්ඩාරනායක විද්‍යාලය
බණ්ඩාරනායක විද්‍යාලය
Bandaranayake College – Gampaha

Bandaranayake College – Gampaha
G.C.E(A/L) 2024 – Grade 12 – Third Term End Evaluation

නව නිර්දේශය
புதிய பாடத்திட்டம்
New Syllabus

තොරතුරු හා සන්නිවේදන තාක්ෂණය II
தகவல், தொடர்பாடல் தொழினுட்பவியல் II
Information & Communication Technology II

20 E II

පැය තුනයි
மூன்று மணித்தியாலம்
Three hours

Name: _____ *Class:* _____ *Index No:* _____

Important:

This question paper comprises of two parts, Part **A** *and Part* **B***. The time allotted for* ***both parts*** *is* ***three hours***

Use of calculators or correction fluid [e.g. Tipp-Ex] is ***not*** *allowed*

Marks will ***NOT*** *be allocated for answers with wrong question numbers & unreadable answers*

This Paper is a ***property of Bandaranayake College- Gampaha***

Part A – Structured Essay:

Answer ***all*** *the questions on this paper itself. Write your answers in the space provided for each question. Note that the space provided is sufficient for your answers and that extensive answers are not expected*

Part B – Essay:

This part contains ***five*** *questions, of which only four questions are to be answered.*
At the end of the time allotted for this paper, tie the ***two parts together*** *before handing them over to the supervisor so that* **Part A** *is* ***on top*** *of* **Part B**.
You are permitted to remove ***only*** **Part B** *of the question paper from the Examination Hall*

For Examiner's Use Only

For the Second Paper		
Part	**Question No**	**Marks**
A	**1**	
	2	
	3	
	4	
B	**1**	
	2	
	3	
	4	
	5	
Total		

Final Marks

In numbers	
In words	

Marking Examiners

Marking Examiner	
Supervised by	

Special Invigilator Remarks

_____
_____
_____
_____

Name & Signature: .....

Part A – Structured Essay

*Answer **all four** questions on this **paper itself***

(1) (a) Show with necessary calculations that 8 bits two's complement representation of octal – 25 is 11101011. **(2 marks)**

(b) Show with necessary calculations and justification that decimal number – 128 cannot be represented in signed magnitude using 8 bits. **(2 marks)**

(c) Show with examples that signed magnitude and one's complement use different methods to represent negative zero (– 0) using 8 bits. **(2 marks)**

(d) Show with example that two's complement arithmetic can be used to represent decimal – 128 using 8 bits. **(2 marks)**

(e) Show how $16_{16\ (\text{hexa-decimal})}$ is represented by using one's complement 8 bits arithmetic. **(2 marks)**

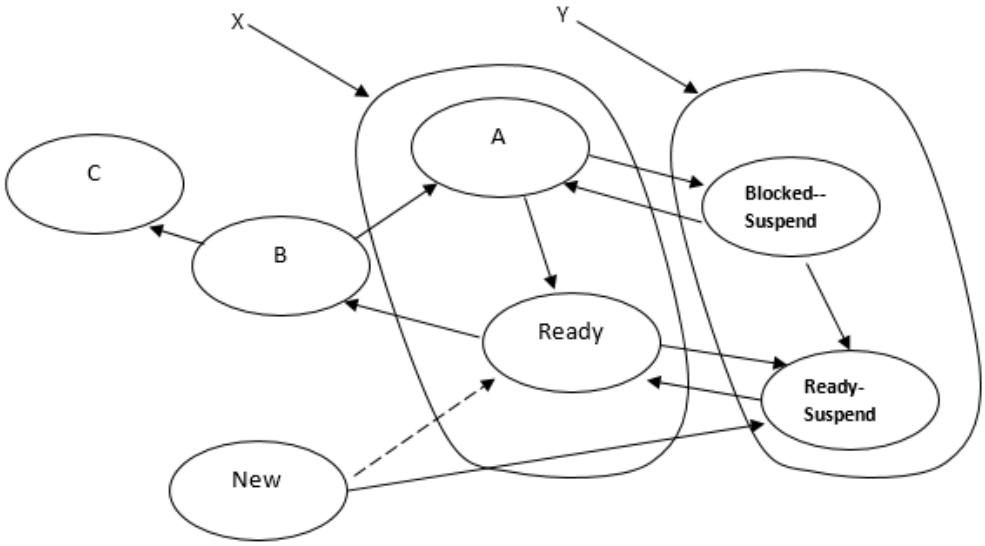
(2) Consider the following statements with regard to computer networking and the terms given in the list below. Match the statement with the correct term and write down the correct label of the term *(e.g.: A,B,C…)* in each blank of the correct statement. **(1 x 10 = 10 marks)**

1. …… is used to assign a new or the same IP address used before, to a communication device at every time it accesses the Internet.
2. ……..protocol is used to help a computing device to login to a remote computer in a network.
3. In …….. protocol, a workstation can release a data frame to the communication channel whenever needed.
4. HTTP and FTP protocols reside at the ……
5. …… is a protocol that listens to the communication channel before releasing a data frame.
6. ……..is used to translate a web address into an IP address.
7. ……..defines how different types of content on websites should be exchanged among the hosts in the Internet.
8. The source and destination IP addresses are assigned to a data packet at the ……..
9. Data bits are translated into different signal types at the ……
10. …… is at present, the most widely used protocol in Local Area Networks.

List

[*A-Hyper Text Transfer Protocol, B-Telnet, C-Ethernet, D-Application layer, E-Network layer, F-Dynamic Host Configuration Protocol, G-Physical layer, H- ALOHA, I-Domain Name Server, J-CSMA/CD*]

(3) Consider the following **process state transition diagram** of a single processor computer and answer the questions given below.



1. Write down the labels for A, B and C. **(1 x 3 = 3 marks)**

2. X and Y indicate some specific locations in the computer. Write them down. **(1 x 2 = 2 marks)**

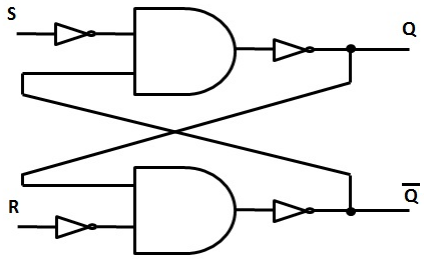
3. State what happens to a process at the place indicated by “B”. **(1 mark)**

4. Give two reasons for the process transition from “B” to “C”. **(2 marks)**

5. Give one reason for the process transition from state “B” to “A”. **(1 mark)**

6. What is the main reason for the process transition from “Ready” to “Ready-Suspend”? **(1 mark)**

(4) Consider the following logic circuit and answer the questions given.



1. State whether the given circuit is a combinational or sequential logic circuit. **(1 mark)**

2. Fill in the blanks of the following truth table. **(5 marks)**

S	R	Q	Q’
1	**1**		
0	1		
1	0		
0	**0**		

3. Draw the S-R flip-flop circuit using only NOR gates. **(4 marks)**