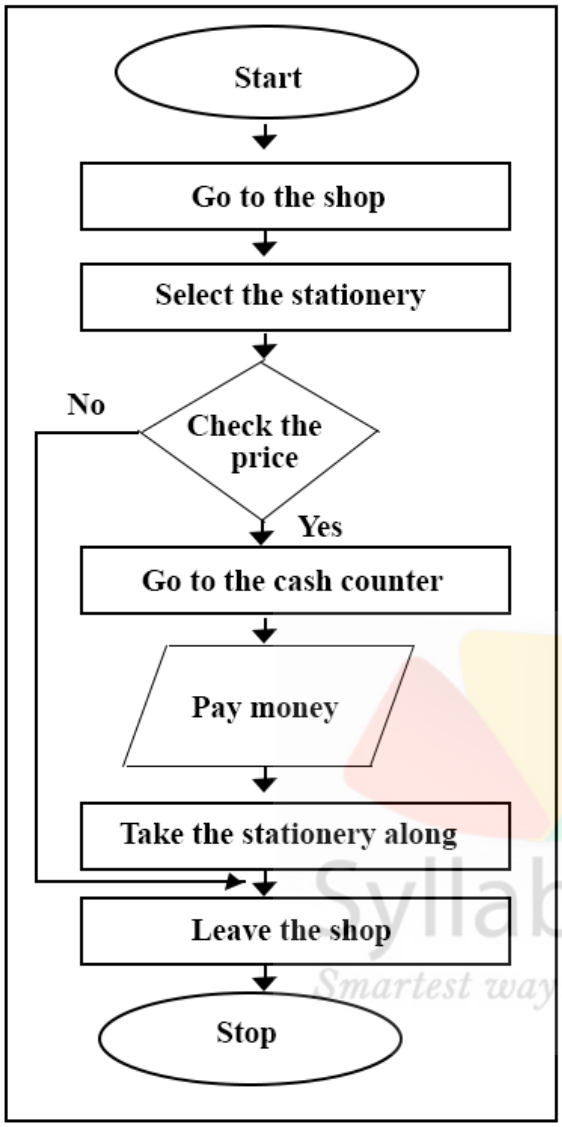
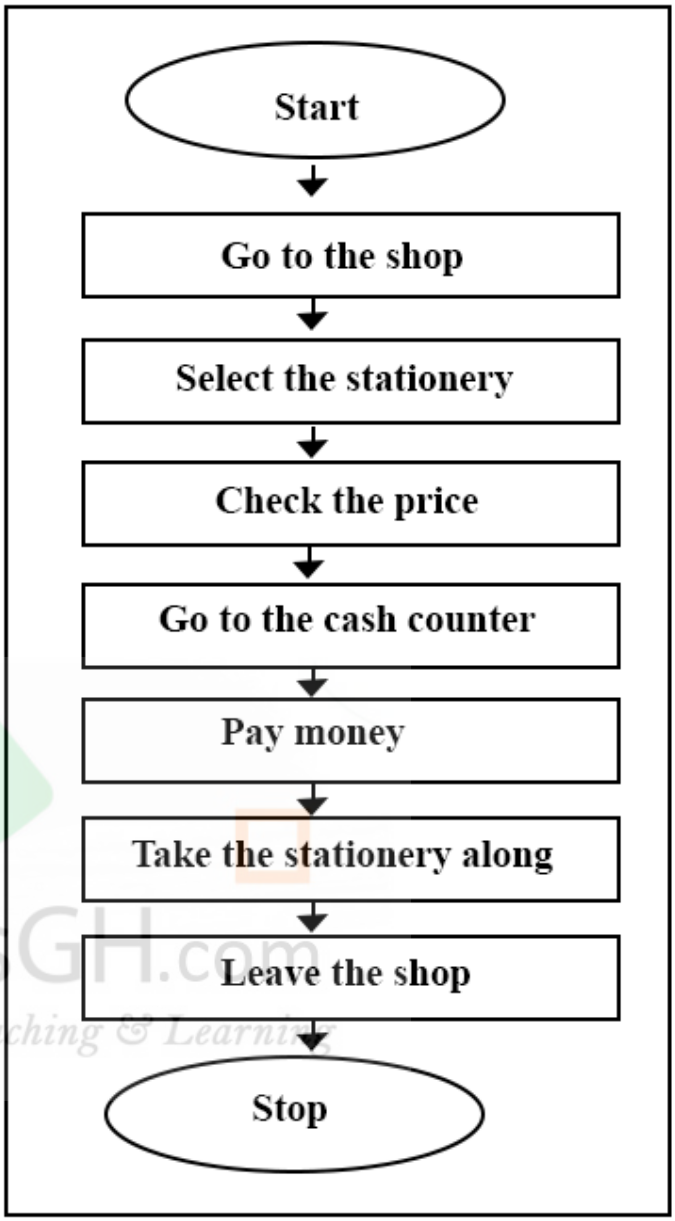
2025 BECE COMPUTING 2 SOLUTION
EASSY

1 (a)



OR



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Marking guide for the flowchart

ITEM	***SCORE***
Start	*1 mark*
Go to the shop	*1 mark*
Check the price	*2 mark*
Select the stationery	*1 mark*
Go to the cash counter	*1 mark*
Pay money	*1 mark*
Take the stationery along	*1 mark*
Leave the shop	*1 mark*
Stop	*1 mark*
Total	***10 marks***

(b) **Modes of payment the students could use to pay the cashier**

1. Cash
2. Mobile money
3. Contactless payment/Credit/debit/mastercard cards/Google Pay/Apple Pay
4. QR code

Any 3 x 1 mark = 3 marks

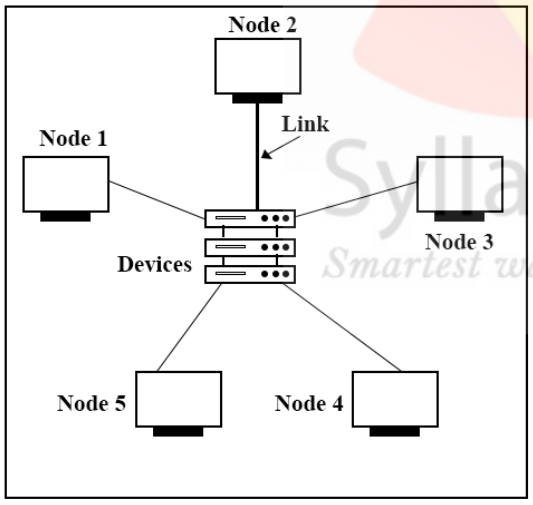
(c)

- **Cash**
  This involves using physical currency, like banknotes and coins to make the payment.
- **Mobile Money**
  This involves the student either transfering the money to shop's mobile money number or the shop sends a bill prompt to the student's phone to confirm payment by entering his/her mobile money pin.
- **Contactless payment**
  This payment is done by tapping or waving a card or device such as phone near a payment terminal. It utilizes technologies like Near Field Communication (NFC) and Radio Frequency Identification (RFID) to enable secure transactions.
- **QR code**
  This payment is done by scanning a QR code with a mobile device to initiate a payment. The QR code contains information like the merchant's details and transaction amount, allowing for a quick and secure transaction.

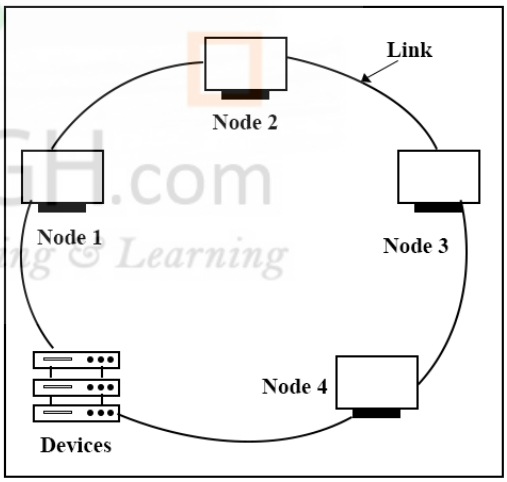
Any 1 x 3 marks = 3 marks

(d) **Network topologies that could be used to network the computers**

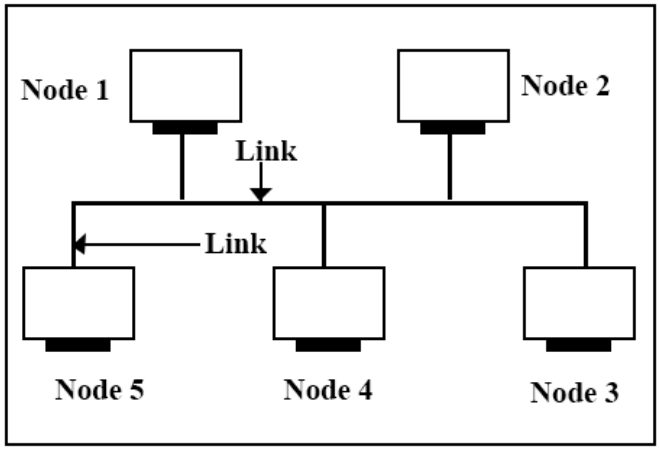
(i) **Star**



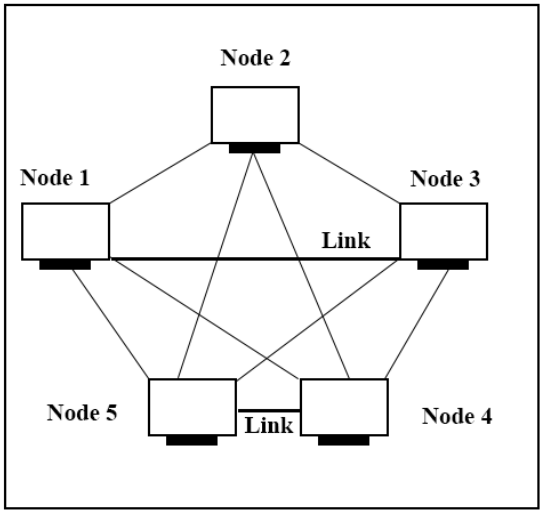
(ii) **Ring**



(iii) **Bus**



(iv) **Mesh**



Any 2 x 2 marks = 4 marks

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(e) (i)

	A	B	C	D
1	**Days**	**Items**	**Quantity**	**Amount GH₵**
2	Monday	Exercise books	4	60
3	Tuesday	Pens	6	40
4	Total			

2 marks

(ii) =D2 + D3 or =SUM(D2:D3) **2 marks**

2 (a)

Perceptual computing is the development of **technology in computing** that makes it possible for **computers and computing devices to detect and respond to their surroundings** more effectively.

OR

Perceptual computing is the **technology** that enable **computers and computing devices** to **interact with the user** through the use of various **sensors and input devices**.

OR

Perceptual computing is the **computing technology** that allow **computers and computing devices** to **understand and interpret human gestures, speech, and facial expressions**.

3 marks

(b) **Data entry devices**

1. Graphic tablet
2. Bar code reader/scanner
3. Optical Character Reader/Recognition (OCR)
4. Optical Mark Reader (OMR)
5. Magnetic Card Reader (MCR)
6. Magnetic Ink Character Reader
7. Radio Frequency Identification (RFID)
8. Biometric scanner
9. Microphone with Speech recognition
10. Quick Response Code Reader/QR Code Reader **Any 3 x 1 mark = 3 marks**

(c) **Techniques that can be used to compress file**

1. Lossy compression technique
2. Lossless compression technique **2 x 1 mark each = 2 marks**

d) **Possible ways to prevent eye strain due to prolonged use of the computer**

1. Use screen filter/screen protector/screen shield
2. Take regular breaks while using the computer
3. Use monitors that do not flicker
4. Blink the eyes occasionally
5. Regularly look away from the screen and focus on something in a distance **Any 2 x 2 marks each = 4 marks**

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3. (a) How to make the word Computing a hyperlink in a word document to the website address www.waecgh.org

1. Select the word computing in the word document
2. Right-click on the selected word (computing)
3. Locate and click on hyperlink from the pop-up menu
4. Ensure the selected word (computing) is seen in the "Text to display" box
5. Copy and paste or type the website address (www.waecgh.org) in the Address box
6. Click on OK **1 mark for each step = 1 x 6 steps = 6 marks**

OR

1. Select the word computing in the word document (1 mark)
2. Press Ctrl + K (Windows) or Command + K (Mac) to open the "Insert Hyperlink Dialogue Box" (2 mark)
3. Ensure the selected word (computing) is seen in the "Text to display" box (1 mark)
4. Copy and paste or type the website address (www.waecgh.org) in the Address box (1 mark)
5. Click on OK (1 mark)

6 marks

(b) **Categories in which objects found under the shape tool are grouped**

1. Lines
2. Rectangles
3. Basic shapes
4. Block arrows
5. Equation shapes
6. Flowchart
7. Stars and Banners
8. Callouts
9. Action Buttons **Any 2 x 1 mark = 2 marks**

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(c) **Writing texts over an image on a flyer using Microsoft Publisher**

1. Insert textbox
2. Type the text
3. Select the textbox
4. Format the text

OR

1. Insert a shape
2. Type the text
3. Select the shape
4. Format the shape **1 mark for each step = 1 x 4 = 4 marks**

4. (a) Data communication models for networks

1. OSI model (Open Systems Interconnection Reference Model)
2. TCP/IP model (Transmission Control Protocol/Internet Protocol)
3. Data Communication Model **Any 1 x 2 marks each = 1 x 2 = 2 marks**

(b) **Sites used for video-sharing**

1. YouTube
2. Facebook Lite
3. Periscope
4. Vimeo **Any 2 x 1 mark each = 2 marks**

(c) **Key principles governing information security**
1. Confidentiality
2. Integrity
3. Availability **Any 2 x 1 mark each = 2 marks**

(d)**Techniques used to search for information from the internet**
(i) **AND**
This search technique allows the user to **get information** from various websites that contains the **keyword** and **another keyword** **3 marks**

(ii) **NOT**
This search technique allows the user to **get information** from various websites that contains **only** the specified keywords and **not** any other keyword. **3 marks**

5 (a) Converting 10010_2 to a decimal number is:
$10010_2 = (1x2^4) + (0x2^3) + (0x2^2) + (1x2^1) + (0x2^0)$
$= 16 + 0 + 0 + 2 + 0$
$= 18$
Therefore, $10010_2 = 18_{10}$ **[1 mark for each correct step = 1 x 4steps = 4 marks]**

(b) Applications of robotics in the given areas include:

Education
1. Age group teaching
2. One-on-one interactions
3. Structured subjects
4. Assessment administration
5. Dangerous/hazardous demonstrations etc. **[Any 2 x 1 mark each = 2 x 1 = 2 marks]**

Transportation
1. Drones
2. Traffic warden
3. Self-driving/autonomous/driverless cars
4. Ticketing
5. Delivery robots etc. **[Any 2 x 1 mark each = 2 x 1 = 2 marks]**

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(c) Components of a robot include:
(i) Sensors
(ii) Actuators
(iii) Motors
(iv) Controllers
(v) Batteries/Power Supply
(vi) Software etc. **[Any 2 x 1 mark each = 2 x 1 = 2 marks]**

(d) Abilities that make (machines) computers or computer-controlled robots intelligent include:
(i) Reasoning/thinking
(ii) Finding meanings
(iii) Learning
(iv) Decision-making
(v) Speech/voice recognition
(vi) Gestures
(vii) Facial recognition etc. **[Any 2 x 1 mark each = 2 x 1 = 2 marks]**