



آغا خان یونیورسٹی ایگزامینیشن بورڈ
AGA KHAN UNIVERSITY EXAMINATION BOARD

Notes from E-Marking Centre on SSC-I Computer Science Annual Examinations 2025

Introduction

This document has been produced for the teachers and candidates of the Secondary School Certificate (SSC) Part I Computer Science. It contains comments on candidates' responses to the 2025 SSC-I Examination, indicating the quality of the responses and highlighting their relative strengths and weaknesses.

E-Marking Notes

This includes overall comments on candidates' performance on every question and *some* specific examples of candidates' responses that support the mentioned comments. Please note that the descriptive comments represent an overall perception of the better and weaker responses as gathered from the e-marking session. However, the candidates' responses shared in this document represent some specific example(s) of the mentioned comments.

Teachers and candidates should be aware that examiners may ask questions that address the Student Learning Outcomes (SLOs) in a manner that requires candidates to respond by integrating the knowledge, understanding, and application skills they have developed during study. Candidates are advised to read and comprehend each question carefully before writing the response to fulfill the demand of the question.

Candidates need to be aware that the marks allocated to the questions are related to the answer space provided on the examination paper as a guide to the length of the required response. A longer response will not in itself lead to higher marks. Candidates need to be familiar with the command words in the SLOs, which contain terms commonly used in examination questions. However, candidates should also be aware that not all questions will start with or contain one of the command words. Words such as 'how', 'why', or 'what' may also be used. It is imperative to refer to the command word guide available on AKU-EB website for understanding the expectations of the command word.

General Observations

Most candidates succeeded in constructing better responses, particularly on the topics of Wide Area Network (WAN), analog signals, and guided and unguided media. However, teachers should focus on the following areas and provide more drills and practice to foster a solid understanding:

- Differentiate between command line interface (CLI) and graphical user interface (GUI).
- Network topologies
- Development of a Hyper Text Markup Language (HTML) based webpage.
- Comparison of primary and secondary memory based on location and their functions.
- Differentiate between impact and non-impact printers, including laser printers and their properties.

Note: Candidates' responses shown in this report have not been corrected for grammar, spelling, format, or information.

DETAILED COMMENTS
Constructed Response Questions (CRQs)

Question No. 1

Question Text	Differentiate command line interface (CLI) and graphical user interface (GUI) on the basis of the given aspects. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%;">Aspect</th> <th style="width: 25%;">CLI</th> <th style="width: 25%;">GUI</th> </tr> </thead> <tbody> <tr> <td>Style of Interaction</td> <td></td> <td></td> </tr> <tr> <td>Use of Resource</td> <td></td> <td></td> </tr> <tr> <td>Feedback on Error</td> <td></td> <td></td> </tr> <tr> <td>Accessibility</td> <td></td> <td></td> </tr> </tbody> </table>	Aspect	CLI	GUI	Style of Interaction			Use of Resource			Feedback on Error			Accessibility		
Aspect	CLI	GUI														
Style of Interaction																
Use of Resource																
Feedback on Error																
Accessibility																
SLO No.	2.1.3															
SLO Text	Differentiate among the following three types of user interfaces provided by the OS: a. Command Line Interface (CLI), e.g., DOS and UNIX b. Menu Driven Interface (MDI), e.g., Novel c. Graphical User Interface (GUI), e.g., Macintosh, Linux, and Windows;															
Max Marks	4															
Cognitive Level	Understanding															
Checking Hints	1 mark for each correct difference (FOUR required)															
Overall Performance	Overall performance in this question was very weak, as candidates struggled to write relevant points for each aspect. A major misconception between the candidates was the understanding of the aspect mentioned in the question.															
Description of Better Responses	<i>In better responses</i> , candidates showed a clear understanding of the concept and wrote accurate points for each aspect. For example, in the style of interaction, they wrote CLI by typing commands and GUI by clicking on the interface. In the use of resources, they mentioned fewer/ more resources or named them in CLI and GUI. Similarly, for feedback on errors and accessibility, they gave relevant points, such as receiving feedback through commands or visuals, and noting differences in accessibility, like CLI is less accessible while GUI is more accessible.															

Image of Better Response

Aspect	CLI	GUI
Style of Interaction	uses text-typing commands	gs a click and run Interface
Use of Resource	uses keyboards to enter command	uses I/O devices to click and run program e.g mouse, printer, scanner
Feedback on Error	Shows error in commands	Gives popup in case of any error
Accessibility	gs less accessible because user has to learn commands	gs accesible because user Interacts with icons by clicking to run program.


Description of Weaker Responses

In weaker responses, candidates struggled to understand the concepts and faced difficulty in writing relevant points of differentiation for each aspect. Some wrote irrelevant points that did not exist or included aspects not mentioned. For example, they mixed up CLI and GUI in the style of interaction, gave incorrect or vague terms in the use of resources, and wrote unclear points on feedback and accessibility without highlighting key differences.

Image of Weaker Response

Aspect	CLI	GUI
Style of Interaction	Command line Interaction	Graphical Interaction
Use of Resource	They use the RAM and ROM, storage.	They use icons, menu, design at the computer
Feedback on Error	They respond very late to the error.	They respond very fast to the error.
Accessibility	They are Accessible is the command line in terface of computer	The have access of icons, menu and details of them in computer.

Suggestions for improvement (Highlight all that apply)

Maximising SLO Achievement	Preferred Pedagogy** Used for this SLO	Assessment Strategies
<ul style="list-style-type: none"> Identify the expectation of command words (use Command Word Guide) Ensure the content is taught at the relevant cognitive level Identify necessary content required (skills + concepts) Review past paper questions on the concept Utilise the resource guide for additional materials 	<ul style="list-style-type: none"> Story Board Cause and Effect Fish and Bone Concept Mapping Audio Visual Resources Think, Pair and Share Knowledge Platform videos Questioning Technique (Socratic approach) Practical Demonstration 	<ul style="list-style-type: none"> Past paper questions Discussion on E-Marking Notes AKU-EB Digital Learning Solution powered by Knowledge Platform <p>https://akueb.knowledgeplatform.com/login</p> 

Any Additional Suggestion: Teachers are suggested to explain these concepts clearly during lessons and provide practice through varied assessments. It is recommended to use comparison charts, Venn diagrams, and quick CLI vs GUI identification tasks to reinforce clarity.

Question No. 2

Question Text	Write any TWO features of analog signals.
SLO No.	4.1.3
SLO Text	Differentiate between analog and digital signals;
Max Marks	2
Cognitive Level	Understanding
Checking Hints	1 mark for writing each correct feature. (any TWO required)
Overall Performance	The overall performance in this question was better. Candidates showed a good understanding of the concept and identified the most relevant points close to the expected answer.
Description of Better Responses	<i>In better responses</i> , candidates used the correct keyword for analog signals, making the point relevant. They also included the concept of waves, continuous form, used to measure physical quantities, and a diagram of analog signals showing a clear understanding of the topic.
Image of Better Responses	<p>Write any TWO features of analog signals.</p> <p>1. Displays and processes data in continuous form.</p> <p>2. Is used for quantities that produce continuous waves. Such as temperature, time, heat etc.</p>

Description of Weaker Responses	<i>In weaker responses</i> , candidates showed only partial understanding of the concepts, lacking the clarity and accuracy needed to reach the correct answer, and included the wrong points, like they replace the points of digital signals in analog signals, and cost comparison between both signals.
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Image of Weaker Responses	
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Suggestions for improvement (Highlight all that apply)

Maximising SLO Achievement	Preferred Pedagogy Used for this SLO	Assessment Strategies
<ul style="list-style-type: none"> Identify the expectation of command words (use Command Word Guide) Ensure the content is taught at the relevant cognitive level Identify necessary content required (skills + concepts) Review past paper questions on the concept Utilise the resource guide for additional materials 	<ul style="list-style-type: none"> Story Board Cause and Effect Fish and Bone Concept Mapping Audio Visual Resources Think, Pair and Share Knowledge Platform videos Questioning Technique (Socratic approach) Practical Demonstration 	<ul style="list-style-type: none"> Past paper questions Discussion on E-Marking Notes AKU-EB Digital Learning Solution powered by Knowledge Platform <p>https://akueb.knowledgeplatform.com/login</p>


Any Additional Suggestion:
 Teachers are suggested to design hands-on activities like role-play, where groups present features of analog and digital signals, and sorting tasks, where students physically place cards of characteristics under the correct category. They can also use quick quizzes or digital simulations to let students test and visualise how both signals work.

Question No. 3

Question Text	Compare Wide Area Network (WAN) with Local Area Network (LAN) by giving any TWO disadvantages of WAN.
SLO No.	5.2.1
SLO Text	Differentiate among the following types of networks: a. Local Area Network (LAN) b. Metropolitan Area Network (MAN) c. Wide Area Network (WAN) d. Personal Area Network (PAN) e. Bluetooth network f. internet;
Max Marks	2
Cognitive Level	Understanding
Checking Hints	1 mark for comparing through each disadvantage (Any TWO required).

Overall Performance	In this question, many candidates demonstrated a clear understanding of the question, giving accurate and appropriate points in their answers that reflected the clarity of concepts.
Description of Better Responses	<i>In better responses</i> , the candidates demonstrated a clear understanding of the concept of WAN compared to LAN, as well as the precise disadvantages of WAN. For example, they mentioned that WAN is expensive to set up, has high latency, has lower bandwidth, is dependent on the service providers.
Image of Better Response	<p>-> WAN is expensive to set up as compared to LAN because it made up of 2 or more LANs.</p> <p>-> Needs a hub or server to connect computers, and connects, cities, countries and continents network.</p>
Description of Weaker Responses	<i>In weaker responses</i> , candidates showed only a partial understanding of the concepts, often mixing up advantages of WAN with disadvantages and writing incorrect or irrelevant points, such as 'work slowly everywhere' or 'signals difficult to carry on longer distances'.
Image of Weaker Response	<p>1 WAN is used in a large area such as city or a country while LAN is used in a much smaller space respectively.</p> <p>2 WAN, however can be weak in signals.</p> <p>3 WAN signal can be disturbed by other radiowaves</p>

Suggestions for improvement (Highlight all that apply)

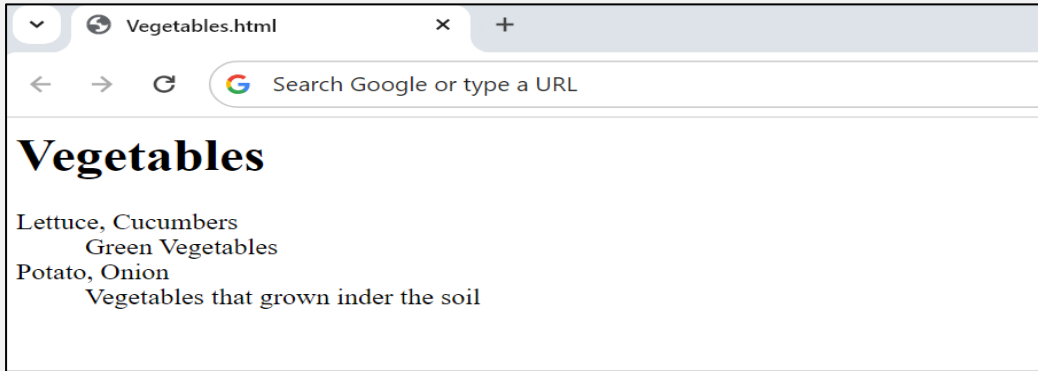
Maximising SLO Achievement	Preferred Pedagogy Used for this SLO	Assessment Strategies
<ul style="list-style-type: none"> Identify the expectation of command words (use Command Word Guide) Ensure the content is taught at the relevant cognitive level Identify necessary content required (skills + concepts) Review past paper questions on the concept Utilise the resource guide for additional materials 	<ul style="list-style-type: none"> Story Board Cause and Effect Fish and Bone Concept Mapping Audio Visual Resources Think, Pair and Share Knowledge Platform videos Questioning Technique (Socratic approach) Practical Demonstration 	<ul style="list-style-type: none"> Past paper questions Discussion on E-Marking Notes AKU-EB Digital Learning Solution powered by Knowledge Platform <p>https://akueb.knowledgeplatform.com/login</p> 

Any Additional Suggestion: Teachers are suggested to give a card-sorting activity where students separate the advantages and disadvantages of WAN, and a case-study task where they analyse a real-world WAN scenario and list its correct pros and cons.

Question No. 4

Question Text

Consider the given image of a web page.



Write the HTML code to display the web page shown in the given image.

SLO No.

6.4.1

SLO Text

Write HTML code to create:
a. ordered list b. unordered list c. definition list;

Max Marks

5

Cognitive Level

Application

Checking Hints

- 1 mark for <html> and </html> tags
- 1 mark for <body> and </body> tags
- 1 mark for <dl> and </dl> tag on correct place
- 1 mark for <dt> and </dt> tag on correct place
- 1 mark for <dd> and </dd> tag on correct place

Overall Performance

Overall performance in this question was below expectations, with only some candidates showing a clear understanding of definition lists in HTML. However, many failed to differentiate between a paragraph and a definition list, giving only basic tags.

Description of Better Responses

In better responses, candidates used the basic tags <html>, <head>, and <body> correctly to display the webpage on a browser and showed a clear understanding of paragraphs, description lists, and headings in HTML by applying the tags appropriately.

Image of Better Response

```

Write the HTML code to display the web page shown in the given image.
<html>
<head>
<title>Vegetables.html</title>
</head>
<body>
<h1><b>Vegetables</b></h1>
<dl>
<dt> Lettuce, Cucumbers </dt>
<dd> Green Vegetables</dd>
<dt> Potato, Onion </dt>
<dd> Vegetables that are
grown under the soil </dd>
</dl>
</body>
</html>
    
```

Description of Weaker Responses


In weaker responses, candidates failed to differentiate between a paragraph and a description list, showing a lack of conceptual knowledge. In some cases, they did not use description list, paragraph, or heading tags and provided only the basic tags like <html>, <head> and <body>

Image of Weaker Response

Write the HTML code to display the web page shown in the given image.

```
<html >
<body >
<h1> Vegetables </h1>
<p> lettuce, Cucumbers <br>Green Vegetables </br></p>
<p> Potato, Onion <br>Vegetables that are grown under the
soil </br> </p>
</body >
</html >
```

Suggestions for improvement (Highlight all that apply)

Maximising SLO Achievement	Pedagogy Used for that SLO	Assessment Strategies
<ul style="list-style-type: none"> Identify the expectation of command words (use Command Word Guide) Ensure the content is taught at the relevant cognitive level Identify necessary content required (skills + concepts) Review past paper questions on the concept Utilise the resource guide for additional materials 	<ul style="list-style-type: none"> Story Board Cause and Effect Fish and Bone Concept Mapping Audio Visual Resources Think, Pair and Share Knowledge Platform videos Questioning Technique (Socratic approach) Practical Demonstration 	<ul style="list-style-type: none"> Past paper questions Discussion on E-Marking Notes AKU-EB Digital Learning Solution powered by Knowledge Platform <p>https://akueb.knowledgeplatform.com/login</p> 

Any Additional Suggestion: Teachers are suggested to conduct a lab activity where students create a simple webpage using lists of all types. They also identify and correct missing or wrongly used tags in a sample HTML code.

Extended Response Questions (ERQs)

Extended response questions offered a choice between parts ‘a’ and ‘b’

Question No. 5a

Question Text	i. Compare primary and secondary storage devices based on their location with respect to the Central Processing Unit (CPU). ii. Discuss the function of primary and secondary storage devices for data processing in real-time scenarios.
SLO No.	1.3.5
SLO Text	Compare primary and secondary storage devices on the basis of location with respect to Central Processing Unit (CPU), cost, storage capacity, average access time, direct/ indirect data processing, means of storing information such as semiconductor, magnetic disks, magnetic tape, and optical discs;

Max Marks	6
Cognitive Level	Understanding
Checking Hints	1 mark for writing each comparison (TWO required). 1 mark for each highlighted point (FOUR required).
Overall Performance	This question was comparatively less opted than part b. Overall, candidates struggled to give better responses to this question. A few candidates presented clear and relevant points, drawing on their familiarity with laser printers from everyday use. However, many candidates provided only limited details, showing a lack of depth in their explanations.
Description of Better Responses	<i>In better responses</i> , answers were well-articulated and addressed the requirements of the question effectively, including the location of primary (near) and secondary memory (far and separated) with respect to the CPU and their functions. For example, Primary storage, being closer to the CPU, allows for faster data retrieval and manipulation, enabling rapid analysis of incoming data streams and immediate access to data stored in primary storage. However, secondary storage devices, being located farther away from the CPU, distance from the CPU can lead to latency issues, introduce delays in data access and retrieval, external device and slower processing speeds.
Image of Better Response	<p>(i) primary memories are located inside the CPU and have a very fast data access because they are near the CPU. while secondary storage devices have a low data access and speed. It is due to the distance between CPU and secondary storage.</p> <p>(ii) Primary memory are consist of RAM and ROM and they are used to store the immediate and interim data and the program to start the computer was also stored in it. i.e ROM. for example, doing calculation or searching something is stored immediately in the RAM. while secondary memory is used to store permanent data of user. until the user doesn't want to delete or change data, the data remains in secondary device. for example, saving a data sheet made in excel in a USB.</p>
Description of Weaker Responses	<i>In weaker responses</i> , candidates showed misconceptions and gave incorrect knowledge. They faced difficulty in understanding and were confused by the terms primary storage and their 'location' in the question. Some stated wrong locations with respect to the CPU or mixed up their functions, for example, writing that primary memory stored data permanently or that secondary memory was directly used for processing.


Image of Weaker Response

(i) The Secondary Storage such as USB (Flash Drive) and portable ~~SSD~~ Hard-drive are not located inside a Computer.

(ii) The Primary Storage which is the SSD or the Hard drive is located in the Computer (known as the permanent storage). And it is more fast as compare to Secondary Storage.

(iii) The Secondary Storage which is the USB or any portable drive which can be removed from the Computer, it can be slower than the Primary Storage.

Suggestions for improvement (Highlight all that apply)

Maximising SLO Achievement	Preferred Pedagogy Used for this SLO	Assessment Strategies
<ul style="list-style-type: none"> Identify the expectation of command words (use Command Word Guide) Ensure the content is taught at the relevant cognitive level Identify necessary content required (skills + concepts) Review past paper questions on the concept Utilise the resource guide for additional materials 	<ul style="list-style-type: none"> Story Board Cause and Effect Fish and Bone Concept Mapping Audio Visual Resources Think, Pair and Share Knowledge Platform videos Questioning Technique (Socratic approach) Practical Demonstration 	<ul style="list-style-type: none"> Past paper questions Discussion on E-Marking Notes AKU-EB Digital Learning Solution powered by Knowledge Platform <p>https://akueb.knowledgeplatform.com/login</p> 

Any Additional Suggestion: Teachers may reinforce the difference between primary and secondary memory through diagrams showing their location with respect to the CPU. They could also use simple examples and activities, such as comparing short-term vs long-term storage, to clarify functions and avoid misconceptions.

Question No. 5b

Question Text	i. Explain the differences between impact and non-impact printers with TWO examples. ii. Give ONE advantage of using laser printers in a modern office environment, focusing on speed, print quality, and operational costs each.]
SLO No.	1.3.9
SLO Text	Compare the types of output devices, i.e. speaker, Liquid Crystal Display (LCD), Light Emitting Diode (LED) display, printers and their types, plotter, actuators and their types, cutters.
Max Marks	6
Cognitive Level	Understanding

Checking Hints	1 mark for comparing each difference (ONE required) 1 mark for writing each example (TWO required). 1 mark for writing each advantage (THREE required).				
Overall Performance	Overall response to this question was below the average. Candidates struggled to give clear and relevant points in their answers despite using a laser printer in their daily lives. This shows that the students were not able to connect theory with real-world usage of technology.				
Description of Better Responses	<i>In better responses</i> , candidates clearly explained the differences between impact and non-impact printers with relevant examples, such as dot matrix for impact printers and inkjet or laser printers for non-impact printers. They also correctly outlined the advantages of laser printers in a modern office environment, often highlighting their faster printing speed, higher print quality, and lower long-term operational costs.				
Image of Better Response	<p>i: Impact printers use electro-mechanical mechanism. They strike against the paper and leave an image on paper. Their speed ranges from 50-500 cps (character per second). Examples include: Dot matrix printer - and</p> <table border="1" data-bbox="399 683 1444 974"> <thead> <tr> <th data-bbox="399 683 869 750">Impact printer</th> <th data-bbox="869 683 1444 750">non impact printer</th> </tr> </thead> <tbody> <tr> <td data-bbox="399 750 869 974"> <ul style="list-style-type: none"> Their printing quality is much poor, but they cost less - example, Dot matrix printer. They produce lot of noise. </td> <td data-bbox="869 750 1444 974"> <ul style="list-style-type: none"> Printing quality is much better than impact printers. ^{Eg,} Laser printer. They do not produce more noise. They are reliable. </td> </tr> </tbody> </table> <p>ii: Laser printers are sharper they print pages very fastly -</p> <ul style="list-style-type: none"> Print quality: printing quality is much better and do not produce much noise while printing. They are much expensive as compare to non-impact printers and others because of their speed, accuracy in printing and print quality. They are latest and advanced printers. Such laser printers should be used in offices due to good printing quality. They will take less time to print. They will not produce much noise, all factors will lead to good environment and good outcomes from printer. 	Impact printer	non impact printer	<ul style="list-style-type: none"> Their printing quality is much poor, but they cost less - example, Dot matrix printer. They produce lot of noise. 	<ul style="list-style-type: none"> Printing quality is much better than impact printers. ^{Eg,} Laser printer. They do not produce more noise. They are reliable.
Impact printer	non impact printer				
<ul style="list-style-type: none"> Their printing quality is much poor, but they cost less - example, Dot matrix printer. They produce lot of noise. 	<ul style="list-style-type: none"> Printing quality is much better than impact printers. ^{Eg,} Laser printer. They do not produce more noise. They are reliable. 				
Description of Weaker Responses	<i>In weaker responses</i> , candidates showed limited understanding and gave incomplete or irrelevant information about impact and non-impact printers. Some mentioned that impact printers were easy to use, advanced, or portable compared to non-impact printers, which was incorrect. The advantages of laser printers were also expressed in vague terms, with little focus on speed, print quality, or operational costs.				


Image of Weaker Response

i)

Impact printers:	Non Impact Printers:
Very easy to use	Not as easy to use compared to impact printers
Can be portable	NOT portable.
Very Advanced	less Advanced

ii) Using Laser Printers in a modern office environment has many positive things getting attracted as the Laser Printer uses a really modern and advanced technology although it is costly but it provides many options as compared to other printers and is more reliable compared to others which is a huge advantage attracting high level companies/schools etc to use Laser printers.

Suggestions for improvement (Highlight all that apply)

Maximising SLO Achievement	Preferred Pedagogy Used for this SLO	Assessment Strategies
<ul style="list-style-type: none"> Identify the expectation of command words (use Command Word Guide) Ensure the content is taught at the relevant cognitive level Identify necessary content required (skills + concepts) Review past paper questions on the concept Utilise the resource guide for additional materials 	<ul style="list-style-type: none"> Story Board Cause and Effect Fish and Bone Concept Mapping Audio Visual Resources Think, Pair and Share Knowledge Platform videos Questioning Technique (Socratic approach) Practical Demonstration 	<ul style="list-style-type: none"> Past paper questions Discussion on E-Marking Notes AKU-EB Digital Learning Solution powered by Knowledge Platform <p>https://akueb.knowledgeplatform.com/login</p> 

Any Additional Suggestion: Teachers are suggested to highlight the differences between impact and non-impact printers through comparative charts, demonstrations, or practical examples. They are also encouraged to guide candidates in explaining the advantages of laser printers more clearly and in greater detail through classroom discussions or case studies.

Extended Response Questions (ERQs)

Extended response questions offered a choice between parts 'a' and 'b'

Question No. 6a

Question Text	i. Write TWO differences between guided (wired) and unguided (wireless) media. ii. Describe any TWO examples of guided media.						
SLO No.	4.2.1						
SLO Text	Compare guided (wired) and unguided (wireless) media with examples, i.e., twisted pair cable, coaxial cable, optic fibre cable, radio waves, microwave, infra-red, Bluetooth, and satellite.						
Max Marks	6						
Cognitive Level	Understanding						
Checking Hints	1 mark for each difference. (Any TWO required) 1 mark for each statement in each description (Any TWO required for each example). No marks will be awarded if the difference is incomplete.						
Overall Performance	Majority of the students opted for this question. Yet, the overall performance in this concept was better. Few candidates showed a good understanding of guided and unguided media, though many experienced difficulties in writing correct examples of guided media.						
Description of Better Responses	<i>In better responses</i> , candidates correctly named guided media such as twisted pair, coaxial, and fiber optic cables, and provided brief comparisons between them. For example, signal travels via wire in guided media but through the air in unguided media, and guided preferred point-to-point while unguided preferred broadcasting. Similarly, signals are current or voltage vs waveform, and guided media is cost-effective while unguided media is expensive.						
Image of Better Response	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%; text-align: center;">Guided media</th> <th style="width: 50%; text-align: center;">Unguided media</th> </tr> </thead> <tbody> <tr> <td>1) It gives direction for the data to flow.</td> <td>It doesn't give direction for the data to flow.</td> </tr> <tr> <td>2) It gives a physical path for data to flow.</td> <td>Data flows through empty spaces.</td> </tr> </tbody> </table> <p style="text-align: center;">Examples of Guided Media:</p> <p>1) Twisted pair cable: It is made up of two different wires twisted together. It resists any change in data due to environmental conditions. Its speed ranges from 2 million to 10 billion kilobits per second. It has 2 types: 1) Shielded twisted pair cable 2) Unshielded twisted pair cable.</p> <p>2) Optic Fibre: It uses the concept of reflection of light for data transfer. Its core is made up of glass or plastic which is surrounded by a layer called cladding.</p>	Guided media	Unguided media	1) It gives direction for the data to flow.	It doesn't give direction for the data to flow.	2) It gives a physical path for data to flow.	Data flows through empty spaces.
Guided media	Unguided media						
1) It gives direction for the data to flow.	It doesn't give direction for the data to flow.						
2) It gives a physical path for data to flow.	Data flows through empty spaces.						

Description of Weaker Responses

In weaker responses, candidates showed limited understanding and gave incomplete or incorrect comparisons. Some confused signals in guided and unguided media, or mentioned vague points about area, cost, working, etc, without clarity, and some were unable to name examples, such as twisted pair, coaxial, or fiber optic cables.


Image of Weaker Response

A

(i) In guided media you can only use it in some areas not all of them as the wires are very important and are only in some areas. While unguided media is used everywhere as it doesn't rely on wires to work making it easy. And another thing about guided media is that if something were to happen to the wires for example they got stolen or maybe ripped apart then it will be useless and people won't be able to use it any more.

(ii) There are many types of guided media in the world for example we can take cameras, printers and ~~and~~ TV.

Suggestions for improvement (Highlight all that apply)

Maximising SLO Achievement	Preferred Pedagogy Used for this SLO	Assessment Strategies
<ul style="list-style-type: none"> Identify the expectation of command words (use Command Word Guide) Ensure the content is taught at the relevant cognitive level Identify necessary content required (skills + concepts) Review past paper questions on the concept Utilise the resource guide for additional materials 	<ul style="list-style-type: none"> Story Board Cause and Effect Fish and Bone Concept Mapping Audio Visual Resources Think, Pair and Share Knowledge Platform videos Questioning Technique (Socratic approach) Practical Demonstration 	<ul style="list-style-type: none"> Past paper questions Discussion on E-Marking Notes AKU-EB Digital Learning Solution powered by Knowledge Platform <p>https://akueb.knowledgeplatform.com/login</p> 

Any Additional Suggestion: Teachers are suggested to use hands-on demonstrations and visual comparative charts to reinforce the differences between guided and unguided media. They should guide candidates to correctly identify examples and clearly associate each type with its signal properties.

Question No. 6b

Question Text	i. Define network topology. ii. Give any FOUR benefits of using ring topology as compared to other topologies (bus, star, mesh). iii. Draw the diagram of ring topology.
SLO No.	5.2.2 and 5.2.3
SLO Text	Define a network topology. Explain the following network topologies with the help of diagrams, i.e., bus topology, ring topology, star topology, and mesh topology.
Max Marks	6
Cognitive Level	Understanding
Checking Hints	Checking Hints 1 mark for defining network topology. 1 mark for writing each benefit of ring topology. (FOUR required) 1 mark for the diagram of ring topology.
Overall Performance	Overall, performance in this question was not satisfactory. Most candidates struggled to correctly define network topology. Few candidates drew accurate diagrams of ring topology, showing nodes connected in a closed loop, while a many confused it with bus or star topologies or misconnected the nodes.
Description of Better Responses	<i>In better responses</i> , candidates correctly defined network topology as the physical or logical arrangement of devices in a network. Many provided four relevant benefits of ring topology, such as organised data flow, equal access for all nodes, simple fault identification, and scalability of ring topology. They also drew accurate ring topology diagrams, showing all nodes connected in a closed loop, and avoided confusion with other topologies.

Image of
Better
Response

i.) A network topology is the physical structure of a computer network. It tells us how computers are connected to each other to form a network.

ii.) Benefits of ring topology:

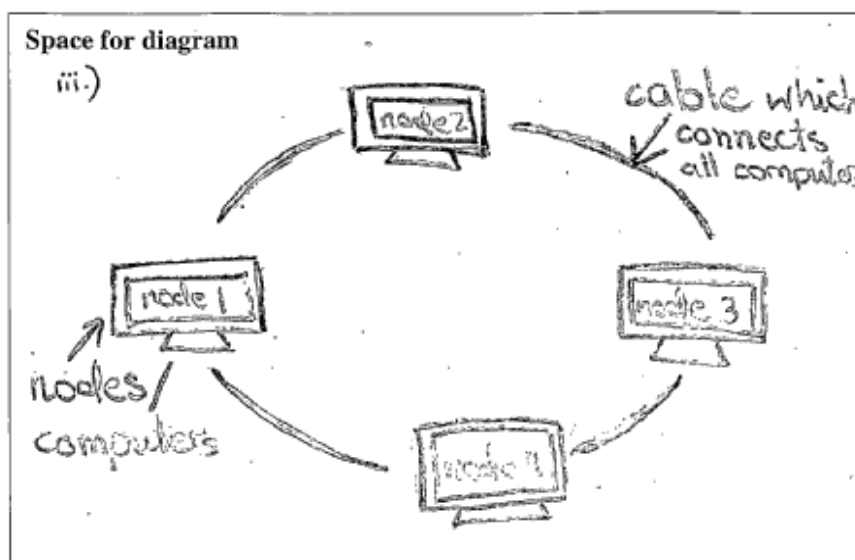
* There is no central hub or switch required which makes it cheaper as compared to star topology.

* This topology is easy to implement as compared to a mesh topology.

* It is also cheaper because of short cable length. All nodes are connected to a single cable.

* ~~Both ends~~ This is like a bus topology with both ends connected together so there is no need of terminators.

* It is suitable for a small network with less number of computers because if it breaks at any point, the entire network is affected. And detection of faults is difficult.



Description of
Weaker
Responses

In weaker responses, candidates showed a weak understanding of the concepts and demonstrated misconceptions about network topology. Many were unable to provide the required benefits of ring topology, as they wrote that ring topology is cost-effective, very fast, and contains a central server. Also, their diagrams were often inaccurate or confused with other topologies.

Image of Weaker Response

option b:-

i. Network topology having many more topologies. For example: ring, mesh, bus and star topologies. In Network topology there is wide area of network.

ii. The four benefits of using ring topology as compared to other topologies are:-

1. It is co effective.
2. It is very faster.
3. It sends the signals very quickly.
4. It is used to send signals to other topologies very quickly.

iii. Diagram of ring topology:-

Suggestions for improvement (Highlight all that apply)

Maximising SLO Achievement	Preferred Pedagogy Used for this SLO	Assessment Strategies
<ul style="list-style-type: none"> • Identify the expectation of command words (use Command Word Guide) • Ensure the content is taught at the relevant cognitive level • Identify necessary content required (skills + concepts) • Review past paper questions on the concept • Utilise the resource guide for additional materials 	<ul style="list-style-type: none"> • Story Board • Cause and Effect • Fish and Bone • Concept Mapping • Audio Visual Resources • Think, Pair and Share • Knowledge Platform videos • Questioning Technique (Socratic approach) • Practical Demonstration 	<ul style="list-style-type: none"> • Past paper questions • Discussion on E-Marking Notes • AKU-EB Digital Learning Solution powered by Knowledge Platform <p>https://akueb.knowledgeplatform.com/login</p>

Any Additional Suggestion: Teachers are suggested to use visual aids, comparative charts, and step-by-step diagram exercises to reinforce understanding of network topologies. They should guide candidates to clearly identify key benefits and practice drawing accurate diagrams to avoid confusion of each topology.

Annexure A: Pedagogies Used for Teaching the SLOs

Pedagogy: Storyboard

Description: A visual pedagogy that uses a series of illustrated panels to present a narrative, encouraging creativity and critical thinking. It helps learners organise ideas, sequence events, and comprehend complex concepts through storytelling.

Example: In a Literature class, students are tasked with creating storyboards to visually retell a novel. They draw key scenes, write captions, and present their stories to the class, enhancing their reading comprehension and fostering their imagination.

Pedagogy: Cause and Effect

Description: This pedagogy explores the relationships between actions and consequences. By analysing cause-and-effect relationships, learners develop a deeper understanding of how events are interconnected and how one action can lead to various outcomes.

Example: In a History class, students study the causes and effects of the Industrial Revolution. They research and discuss how technological advancements in manufacturing led to significant societal changes, such as urbanisation and labour reform movements.

Pedagogy: Fish and Bone

Description: A method that breaks down complex topics into main ideas (the fish) and supporting details (the bones). This visual approach enhances comprehension by highlighting essential concepts and their relevant explanations.

Example: During a Biology class on human anatomy, the teacher uses the fish and bone technique to teach about the human skeletal system. Teacher presents the main components of the human skeleton (fish) and elaborates on each bone's structure and function (bones).

Pedagogy: Concept Mapping

Description: An effective way to visually represent relationships between ideas. Learners create diagrams connecting key concepts, aiding in understanding the overall structure of a subject and fostering retention.

Example: In a Psychology assignment, students use concept mapping to explore the various theories of personality. They interlink different theories, such as Freud's psychoanalysis, Jung's analytical psychology, and Bandura's social-cognitive theory, to see how they relate to each other.

Pedagogy: Audio Visual Resources

Description: Incorporating multimedia elements like videos, images, and audio into lessons. This approach caters to different learning styles, making educational content more engaging and memorable.

Example: In a General Science class, the teacher uses a documentary-style video to teach about the solar system. The video includes stunning visual animations of the planets, interviews with astronomers, and background music, enhancing students' interest and understanding of space.

Pedagogy: Think, Pair, and Share

Description: A collaborative learning technique where students ponder a question or problem individually, then discuss their thoughts in pairs or small groups before sharing with the entire class. It fosters active participation, communication skills, and diverse perspectives.

Example: In a Literature in English class, the teacher poses a thought-provoking question about a novel's moral dilemma. Students first reflect individually, then pair up to exchange their opinions, and finally participate in a lively class discussion to explore different viewpoints.

Pedagogy: Questioning Technique (Socratic Approach)

Description: Based on Socratic dialogue, this method stimulates critical thinking by posing thought-provoking questions. It encourages learners to explore ideas, justify their reasoning, and discover knowledge through a process of inquiry.

Example: In an Ethics class, the instructor uses the Socratic approach to lead a discussion on the meaning of justice. By asking a series of probing questions, the students engage in a deeper exploration of ethical principles and societal values.

Pedagogy: Practical Demonstration

Description: A hands-on approach where learners observe real-life applications of theories or skills. Practical demonstrations enhance comprehension, skill acquisition, and problem-solving abilities by bridging theoretical concepts with real-world scenarios.

Example: In a Food and Nutrition class, the instructor demonstrates the proper technique for filleting a fish. Students observe and then practice the skill themselves, learning the practical application of knife skills and culinary precision.

(**Note:** The examples provided in this annexure serve as illustrations of various pedagogies. It is important to understand that these pedagogies are versatile and can be applied across subjects in numerous ways. Feel free to adapt and explore these techniques creatively to enhance learning outcomes in your specific context.)

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