

Java Institute For Advanced Technology

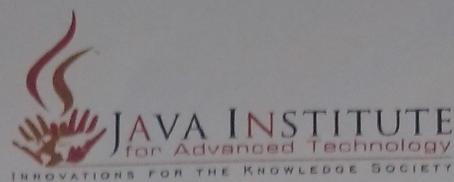
Department of Examinations

COURSE(S) – (LEADING TO)	PCJT SOFTWARE ENGINEER I
UNIT NAME	COMPUTER HARDWARE NETWORKING AND SERVER CONFIGURATIONS
UNIT ID	H7E3 04
ASSIGNMENT ID	H7E3 04/EX/01

IMPORTANT GUIDELINES FOR CANDIDATES

- Students are required to print this document on A4 paper (80 gsm) in black-and-white format and write their answers only within the designated spaces. Attachments are not allowed.
- The document should be printed using printer ink that does not smudge or blot.
- The use of pencils, erasable pens, pens that produce smudged or blotting ink, or any other writing instruments that can be erased is strictly prohibited. Only submissions written using blue or black pens will be accepted.
- This document must be printed single-sided, and the page numbers must not be changed.
- Students are required to write their answers exclusively in their OWN HANDWRITING. Submissions prepared using printed formats, typed documents, or any non-handwritten methods will be strictly rejected without exception.
- Students are permitted to refer to books, internet sources, journals, and other similar reference materials for guidance. However, the answers they submit must strictly represent their own original ideas, interpretations, and understanding.
- Students are expected to refrain from repeating any content in their document.
- Students will be penalized for any plagiarism.

- Upon completing the assessment, students must submit it to their respective branch and obtain an official RECEIPT DOCUMENT. This receipt must be signed by an authorized representative of the Java Institute and bear the official seal.
- Do not hand over the submission without obtaining the RECEIPT DOCUMENT. It is the student's responsibility to ensure the assignment is submitted to the designated official and to collect the RECEIPT DOCUMENT as proof of submission. Verbal agreements will not be accepted.
- The DESIGNATED OFFICIALS will be listed on the submission portal.
- It is mandatory for students to scan and upload the following documents to the student portal:
 - a. A scanned copy of the completed assessment.
 - b. A scanned copy of the signed RECEIPT DOCUMENT.



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NAME (BLOCK CAPITALS)	H.L IMESH VISHMIKA LIYANAGE
NIC	200309800323

Question 01



- a) Identify the given tool and its primary purpose? [2 marks]

This is an ~~anti static~~ anti static Wrist strap that use to protect electronic parts from static electricity when a person work with electronic parts, static electricity from their body could damage the components. this tool prevent such a damage.

- b) You have been assigned to perform routine maintenance on a set of office desktop computers that have been experiencing frequent overheating and occasional system crashes. During inspection, you notice dust buildup inside the cases, irregular fan operation, and some users reporting slow system performance.

Based on this scenario:

- Identify 3 key computer maintenance principles that should be followed. [3 marks]
- Explain how these principles help improve system stability and lifespan. [5 marks]

i. keeping the computer clean

When the computer is not properly clean dust could get trapped inside. When dust get into components like fans and air vents it could stop heat getting off the computer. When this happens it could lead to overheating and the system crashes.

by cleaning the computers properly and regularly, overheating system crashes could be prevented.

ii. keeping software and security upto date

outdated software could have bugs and errors that prevent software working properly and old software could be using more hard and RAM spaces more than they needed by keeping software upto date prevents this and could enhances the performance. keeping security upto date also very important. hackers and virus could slip through old security system then they can slow down or crash computers if they wanted to. by keeping security upto date prevents unnecessary visitors to computers.

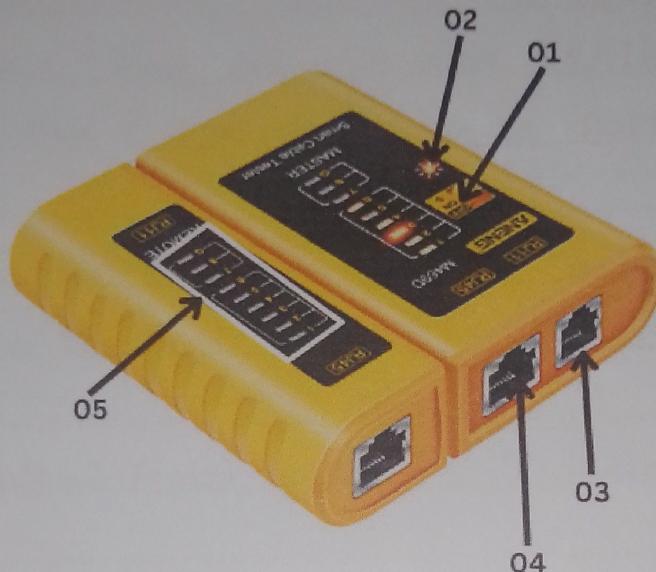
~~iii. Back up important data~~

iii. monitoring and Diagnostics

even after keeping computer clean components could fail. this also causes slow performance and crashes. There tools and software that allow us to monitor our components. with this tools and softwares we could identify problem, errors and which parts are working slow and which parts are need to be replaced.

(Total = 10
marks) Question
02

- a) Identify and name the labeled parts numbered 1 to 5 of the device shown in the image.
[2.5 marks]



- 01). on/off switch.....
- 02). Power light.....
- 03). RJ11 port.....
- 04). RJ45 port.....
- 05). Test lights.....

buildings. Several computers are unable to connect to the internet, and your supervisor suspects there may be faulty Ethernet cables.

- Briefly explain how to use it to test a network cable in four steps. [3 Marks]

1. Turn on the tester

2. Connect the cable : plug one end into IN/Transmit Port on the tester and other end to OUT/Receive Port

3. Start the test : There should be a "Test" button or a specific action to initiate the test

4. Observe the results : Tester show pass/fail indications with LED

- After inspection, it was identified that the issue was due to physical damage to the Ethernet cable near the RJ45 connector. Outline the steps required to fix this issue.

[4.5 Marks]

1. Remove the damaged cable
2. Measure the needed leg length of the cable and add a little more for easier maneuvering. Use a sharp tool to make a clean cut.
3. Using a cable stripper or carefully using a knife, remove about 1 inch of the outer jacket from each end of the cable, exposing the 4 pair of wires inside.
4. Untwist the four pair of wires for about 1 inch
5. Arrange the wires in the correct order
6. Keep the wires flat and in order as push them into the RJ-45 plug with flat surface of the plug on top
7. Place the wired plug into crimping tool
8. After checking with tester replace the new cable in damage cables place. (Total = 10 marks)

Question 03

8. after checking with tester replace the new cable in damage (Total = 10 marks)

Question 03 cables place.

Lahiru is working on his laptop and tries to connect his old printer to the computer using a USB cable. However, the printer is not being detected by the computer. He checks the USB connections and tries restarting both devices, but the issue persists.

a) Based on the given situation, what are four possible reasons why Lahiru's computer is not detecting the printer? [2 marks]

1. Old or missing printer drivers

2. damage cable

3. Printer not working properly

4. Disabled Printer setting or connection mode.

b) What steps should you take to identify the correct problem among the possible problems you identified above? [4 marks]

1. if the drivers are missing installing drivers or updating current drivers.
2. try to connect using new USB cable
3. try to connect to a different laptop or computer
4. Making sure on printer USB mode enabled.

c) What are the steps Lahiru can take to fix the above identified problem?

[4 marks]

1. if the drivers are missing installing correct drivers or updating

the available drivers.

2. if the USB cables are damaged replacing old cable with new cable.

3. if the printer is not working properly, he should take it to technician

4. if the USB mode disabled turning on it on using printers settings.

(Total = 10 marks)

a) The company requires all areas to be connected to a central router for internet access, with shared access to printers and files across the office. The network must be reliable and scalable for future expansion.

You are required to draw a network diagram on the floor plan given below. Use standard symbols to mark the diagram. Do not use or attach additional papers. [4 marks]

