MODULE NAME:	MODULE CODE:
COMPUTER ARCHITECTURE	COARf120
COMPUTER ARCHITECTURE	COARf120d
COMPUTER ARCHITECTURE	COARf120p
COMPUTER FUNDAMENTALS	COFD5111

ASSESSMENT TYPE:	**RIVESED TAKE HOME EXAMINATION – PAPER ONLY**
TOTAL MARK ALLOCATION:	**120 MARKS**
TOTAL HOURS:	**The time given to students to complete this assessment will be indicated on your module in Learn.**

By submitting this assessment, you acknowledge that you have read and understood all the rules as per the terms in the registration contract, in particular the assignment and assessment rules in The IIE Assessment Strategy and Policy (IIE009), the intellectual integrity and plagiarism rules in the Intellectual Integrity Policy (IIE023), as well as any rules and regulations published in the student portal.

INSTRUCTIONS:

1. *Please adhere to all instructions. These instructions are different from what is normally present, so take time to go through these carefully.*
2. *Independent work is required. Students are not allowed to work together on this assessment. Any contraventions of this will be handled as per disciplinary procedures in The IIE policy.*
3. *No material may be copied from original sources, even if referenced correctly, unless it is a direct quote indicated with quotation marks.*
4. *All work must be adequately and correctly referenced.*
5. *You should paraphrase (use your own words) the concepts that you are referencing, rather than quoting directly.*
6. *Marks will be awarded for the quality of your paraphrasing.*
7. *This is an open-book assessment.*
8. *Assessments must be typed unless otherwise specified.*
9. *Ensure that you save a copy of your responses.*
   - 9.1. *Complete your responses in a Word document.*
   - 9.2. *The document name must be your name.student number.Module Code.*
   - 9.3. *Once completed the assessment, upload your document under the submission link in the correct module in Learn.*

Additional instructions:

- *Calculators are not allowed*
- *For multiple-choice questions, give only one (1) response per question. The marker will ignore any question with more than one answer, unless otherwise stated. You should, therefore, be sure of your answer before committing it to paper.*
- *Answer All Questions .*

Referencing Rubric

Providing evidence based on valid and referenced academic sources is a fundamental educational principle and the cornerstone of high-quality academic work. Hence, The IIE considers it essential to develop the referencing skills of our students in our commitment to achieve high academic standards. Part of achieving these high standards is referencing in a way that is consistent, technically correct and congruent. This is not plagiarism, which is handled differently.
Poor quality formatting in your referencing will result in a penalty **of a maximum of ten percent being deducted from the mark awarded**, according to the following guidelines. Please note, however, that **evidence of plagiarism in the form of copied or uncited work (not referenced), absent reference lists, or exceptionally poor referencing, may result in action being taken in accordance with The IIE's Intellectual Integrity Policy (0023)**.
Markers are required to provide feedback to students by indicating (circling/underlining) the information that best describes the student's work.
Minor technical referencing errors: 5% deduction from the overall mark – the student's work contains five or more errors listed in the minor errors column in the table below.
Major technical referencing errors: 10% deduction from the overall mark – the student's work contains five or more errors listed in the major errors column in the table below.
If both minor and major errors are indicated, then 10% is deducted from the overall mark.
The examples provided below are not exhaustive but are provided to illustrate the error.

Required: **Technically correct referencing style**	**Minor errors** **in technical correctness of referencing style** **Deduct 5% from mark awarded**	**Major errors** **In technical correctness of referencing style** **Deduct 10% from mark awarded**
Consistency The same referencing format has been used for all in-text references and in the bibliography/reference list.	Minor inconsistencies. The referencing style is generally consistent, but there are one or two changes in the format of in-text referencing and/or in the bibliography. For example, page numbers for direct quotes (in-text) have been provided for one source, but not in another instance. Two book chapters (bibliography) have been referenced in the bibliography in two different formats.	Major inconsistencies. Poor and inconsistent referencing style used in-text and/or in the bibliography/ reference list. Multiple formats for the same type of referencing have been used. For example, the format for direct quotes (in-text) and/or book chapters (bibliography/ reference list) is different across multiple instances.
Technical correctness Referencing format is technically correct throughout the submission. Position of the reference: a reference is directly associated with every concept or idea. For example, quotation marks, page numbers, years, etc. are applied correctly, sources in the bibliography/reference list are correctly presented.	Generally, technically correct with some minor errors. The correct referencing format has been consistently used, but there are one or two errors. Concepts and ideas are typically referenced, but a reference is missing from one small section of the work. Position of the references: references are only given at the beginning or end of every paragraph. For example, the student has incorrectly presented direct quotes (in-text) and/or book chapters (bibliography/reference list).	Technically incorrect. The referencing format is incorrect. Concepts and ideas are typically referenced, but a reference is missing from small sections of the work. Position of the references: references are only given at the beginning or end of large sections of work. For example, incorrect author information is provided, no year of publication is provided, quotation marks and/or page numbers for direct quotes missing, page numbers are provided for paraphrased material, the incorrect punctuation is used (in-text); the bibliography/reference list is not in alphabetical order, the incorrect format for a book chapter/journal article is used, information is missing e.g. no place of publication had been provided (bibliography); repeated sources on the reference list.
Congruence between in-text referencing and bibliography/reference list All sources are accurately reflected and are all accurately included in the bibliography/reference list.	Generally, congruence between the in-text referencing and the bibliography/ reference list with one or two errors. There is largely a match between the sources presented in-text and the bibliography. For example, a source appears in the text, but not in the bibliography/reference list or vice versa.	A lack of congruence between the in-text referencing and the bibliography. No relationship/several incongruencies between the in-text referencing and the bibliography/reference list. For example, sources are included in-text, but not in the bibliography and vice versa, a link, rather than the actual reference is provided in the bibliography.
In summary: the recording of references is accurate and complete.	In summary, at least 80% of the sources are correctly reflected and included in a reference list.	In summary, at least 60% of the sources are incorrectly reflected and/or not included in reference list.

Overall Feedback about the consistency, technical correctness and congruence between in-text referencing and bibliography:

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Question 1 (Marks: 10)

The-columns question: Write the correct term in Column B that Matches the description Column A. In your answer booklet, write down only the question number and, next to it, the correct answer (Term) in column B.

Column A		**Column B**
Q.1.1	Provides protection against a power dip or power outage, contains a battery that provides continuous AC power.	
Q.1.2	A feature that enables a single-core CPU to function like two CPUs.	
Q.1.3	Type of RAM that is used for laptops.	
Q.1.4	Official name for Southbridge chip found in Intel's chipsets.	
Q..1.5	The term that describes the delay in the RAM's response to a request from the MCC.	
Q.1.6	An integrated circuit device that is used to control USB devices connected to a USB port.	
Q.1.7	Which tool would help you determine why a print job did not print?	
Q.1.8	Any software that is encoded into a ROM chip and can be run without any instructions from the CPU.	
Q.1.9	A utility used by NTFS to provide security for individual files and folders.	
Q.1.10	To make your files unreadable by others, what should you use?	

Question 2 **(Marks: 10)**

Multiple-choice questions: Select one correct answer for each of the following. In your answer booklet, write down only the number of the question and next to it, the letter of the correct answer.

Q.2.1	Which of the following might offer good hardware authentication?		(1)
	(a)	Strong passwords;	
	(b)	Encrypted passwords;	
	(c)	NTFS;	
	(d)	Smart cards.	
Q.2.2	Which of the following statements about the expansion bus is true?		(1)
	(a)	The expansion bus runs at the speed of the system clock;	
	(b)	The expansion bus crystal sets the speed for the expansion bus;	
	(c)	The CPU communicates with RAM via the expansion bus;	
	(d)	The front-side bus is another name for the expansion bus.	
Q.2.3	What is the maximum cable length for USB 2.0?		(1)
	(a)	1.2 meters;	
	(b)	1.2 yards;	
	(c)	5 meters;	
	(d)	5 feet.	
Q.2.4	According to troubleshooting theory, what is the first thing you should do when you arrive to work on a computer?		(1)
	(a)	Identify the problem;	
	(b)	Ask how the user broke the machine;	
	(c)	Start working on the problem immediately;	
	(d)	Back up critical data;	
	(e)	None of the above.	

Q.2.5	What mechanism is used by most inkjet printers to push ink onto the paper?		(1)
	(a)	Electrostatic discharge;	
	(b)	Gravity;	
	(c)	Air pressure;	
	(d)	Electro conductive plates.	
Q.2.6	Which CPU feature enables the microprocessor to support running multiple operating systems at the same time?		(1)
	(a)	Clock multiplying;	
	(b)	Caching;	
	(c)	Pipelining;	
	(d)	Virtualisation support;	
	(e)	Hyper-threading.	
Q.2.7	What providers the illumination for LCD monitors?		(1)
	(a)	Backlights;	
	(b)	Inverter;	
	(c)	Lamp;	
	(d)	LCD panel.	
Q.2.8	What do you plug into a three-row, 15-pin port?		(1)
	(a)	Mouse;	
	(b)	Keyboard;	
	(c)	Monitor;	
	(d)	Joystick;	
Q.2.9	A client calls complaining that his new LCD monitor is flickering. What is most likely the problem?		(1)
	(a)	The refresh rate is set too high;	
	(b)	The refresh rate is set too low;	
	(c)	The CCFL backlight is failing;	
	(d)	The LED backlight is failing;	

Q.2.10	After a sudden power outage. Bob's PC rebooted, but nothing appeared on the screen. The PC just beeps at him, over and over and over. What is most likely the problem?		(1)
	(a)	The power outage toasted his RAM;	
	(b)	The power outage toasted his video card;	
	(c)	The power outage toasted his CPU;	
	(d)	The power outage toasted his hard drive;	
	(e)	None of above.	

Question 3		**(Marks: 35)**
Answer all questions. **You will receive more marks for your own original examples than for examples in your textbook, from your lecturer, or on Learn.**)		
Q.3.1	A user has informed you that he/she has a problem with the computer. By following the first five steps of the troubleshooting theory to diagnose and fix a computer, discuss in your own words how would you achieve this. (note the steps should be in their correct order)	(10)
Q.3.2	After completing the task as instructed in **Q.3.1,** the IT manager then asked you, how you would identify RAM problem on a PC. Respond to the IT manager by listing the five errors that point to RAM problems and provide example for each. **You will receive more marks for your own original examples than for examples in your textbook, from your lecturer, or on Learn**.	(15)
Q.3.3	Explain why you would use the soft on/off jumper when working on the ATX system.	(5)

Q.3.4	Briefly define the following terms: • Overclocking. • Virtualization Support.	(5)

Answer	Marks
Explanation is taken directly from the textbook/ lecturer material/ Learn.	**0 - 3**
Explanation is taken directly from the textbook/ lecturer material/ Learn AND has been paraphrased.	**4 - 5**

Question 4 (Marks: 35)

Keep in mind that you will receive more marks for your own original examples than for examples in your textbook, from your lecturer, or on Learn.

Q.4.1	Mary decided to upgrade her CPU. Provide the steps that she will take to completely perform the upgrade and explain why she should also consider cooling as one of her concerns.	(7)

Q.4.2	Distinguish between LGA (Land Grid Array) and PGA (Pin Grid Array) socket types.	(4)

Answer	Marks
Concept A and concept B are discussed separately, and the points for each concept do not correspond	**1**
Concept A and concept B are discussed separately, and the order of points is consistent	**2 to 3**
A contrast is provided and the discussion of the 2 theoretical concepts is integrated.	**4**

Q.4.3	Virtualization support is one of the features that the latest CPUs can perform. Explain by an example of an environment where you would need to perform visualisation.	(6)

Q.4.4 At the most basic level, computers work through three stages, which is called the computing process. Discuss the three stages of the computing process. (9)

Answer	Marks
Discussion is taken directly from the textbook/ lecturer material/ Learn.	1 - 3
Discussion is taken directly from the textbook/ lecturer material/ Learn AND has been paraphrased.	4 - 7
Original discussion and relevant	8 - 9

Q.4.5 By aid of examples, discuss the following operational procedures used by a Tech to be an effective Tech: (9)

- Eliciting answers;
- Expectations and follow-up;
- Documentation.

You will receive more marks for your own original examples than for examples in your textbook, from your lecturer, or on Learn.

Question 5 (Marks: 30)

Q.5.1 Video capture and playback suffer from several quirks. Describe any three common quirks you would find on the on the capture side. (6)

Q.5.2 Although FireWire is becoming increasingly uncommon on PCs, it is still used. Other than just speed and USB that different looks, what are the three differences between FireWire and USB that when compared you would choose to use one over the other. (6)

Q.5.3 Discuss how you would use troubleshooting techniques when a wireless connection does not work or works intermittently on a laptop. (5)

	Answer	**Marks**
	Discussion is taken directly from the textbook/ lecturer material/ Learn.	1- 2
	Discussion is taken directly from the textbook/ lecturer material/ Learn AND has been paraphrased.	3 - 4
	Original discussion and relevant	5
Q.5.4	Use at least two factors/characteristics for each to compare the following RAID types: Mirrored drives; Duplexing drives; Disk stripping.	(9)
Q.5.5	Describe the steps you would follow when upgrading the RAM in a portable PC.	(4)

END OF PAPER