TAS-IPT-AMS option topic, six mark question transcript

(Duration: 9 minutes 40 seconds)

Hi, I'm Ms. Rose. And today I'll take you through AMS Option Topic and unpacking what is required in a six mark response for the IPT HSC examination. Since 2019, there has been an emergence of a six mark question. And previously the highest amount awarded was a five mark question. Students are allocated an hour and 10 minutes for completing two or four option topics. And this is worth 40 marks. I'm going to go through a question and afterwards, if you can pause the video and write a response, we'll then go through unpacking what the marking criteria is asking of students.

So the question is, a warehouse is introducing a wireless Drone-RFID system to manage it stock. A drone is an aerial vehicle operated by a person. The system will use long range RFID technology to replace its current barcode-based stock management system. The drone will be used as a relay between the RFID tags and an RFID radar. As the drone flies up and down the isles, it will detect the RFID tags and locate and catalogue the stock. Compare the use of the Drone-RFID system to the use of barcodes for stock management in the warehouse. So how did you go? Writing a response can be challenging. Did you have subject knowledge you could recall? Could you understand the terminology in the question? Did you know how to structure your response? Can you remember what is expected of you when understanding a scenario based question, and the length of response required for six marks.

Every year the HSC markers give feedback. So what did the markers notice in student responses? Areas for students to improve include providing advantages and disadvantages of the use of RFID and barcode technologies with reference to whether these systems are human or machine centred systems. Did your first attempt at a response have these features? So, breaking down the question. In your question booklet, you can get a pen or a highlighter and highlight the components. The first part of the question is based on the scenario. And then highlighted in red, we can see compare, which is a NESA key term. And compare means to see how things are similar or different. Relate how things are similar or different, and make the relationships between things evident providing the why and, or how. Before you can compare, you should identify, outline, describe, and then compare. And then keywords for compare are the effect of, or the impact of. The words highlighted in blue relate to stock management, and comparing the barcode versus the Drone-RFID system.

Here, the marking criteria, you can see that it moves from one to six. And at the top, to get six marks, you need to provide a comprehensive comparison of the use of Drone-RFID with the use of barcodes for stock management. When we see the criteria compared against the key terms guide, we can see that identifying which is to name is one mark. Outlining, sketch in general terms, will get you two to three marks. Describing, which is to go through the characteristics and features, will get three to four marks. And comparing will move you to five and six marks, which is relating the similarities and differences between the two systems and applying it to stock management.

So we'll go through what responses get what marks. Here is a one mark response. A drone can go around a warehouse quicker than a human. Or RFID can be scanned at a distance, and therefore it is quicker than a barcode. This is where a student is identifying a feature. To show some understanding is to sketch in general terms. A sample of this would be, a drone can move around a warehouse and scan RFID to check stock in a stock management database. A three mark response can have some description or an outline. Here's an example of a sample answer. Barcodes can connect a system to a database for stock management. Barcode readers can be handheld or on a conveyor belt, but line of sight needs to occur for reading. Drone-RFID allows speed to be increased.

A four mark response has a description, and describes the use of Drone-RFID and the use of barcodes for stock management. A sample answer could be, barcodes can connect a system to a database for stock management. Barcode readers can be handheld or on a conveyor belt, but line of sight needs to occur for reading. Drone-RFID allows speed to be increased. RFID transfers through the copper wire in the label and does not need to be seen by the reader. Drones can fly up and down a warehouse and collect stock levels fed into a database.

A five mark response describes the use of Drone-RFID and the use of barcodes for stock management, recognising some key differences. So a sample answer might be, both Drone-RFID and barcodes need human operators to work. The data from the stock management labels can be fed into a computer system for stock management. Barcodes can connect a system to a database for stock management through the tag being read by a handheld device or on a conveyor belt, but line of sight needs to occur for tag reading. Drone-RFID allows speed of processing to be increased as line of sight is not needed and batch tag processing can occur. RFID on packages transfers through the copper wire and the label and does not need to be seen by the Drone-RFID. Drones can fly up and down a warehouse and collect stock levels to be fed into a database. Drone-RFID may have tag collision if there is signal delay or interference with the signal due to objects in the building.

So, a six mark response answer structure is really important as this will help guide you to be ensured that you can get six out of six marks. What knowledge needs to be communicated to the marker is also important. So, with the structure of the response, the first step might be identify similarities of both Drone-RFID and barcode. Step two, discuss barcode technology and explain its relationship to stock management. Step three, discuss Drone-RFID and explain its relationship to stock management. And step four, explain through a comprehensive comparison and make judgement on what system may work better in stock management. Here is the level of knowledge needed to convey comprehensive comparison for a sample answer. Although both the Drone-RFID and the barcode reader require human operators, the Drone-RFID can work more effectively than the barcode system in the warehouse. Barcode scanning is time consuming and prone to errors as the operator has to align the reader and code exactly to scan it successfully. On the other hand, the drone flies through the warehouse scanning the tags as it moves around. RFID tags do not need line of sight to be read. Hence, as the drone is flying throughout the warehouse, it would be able to scan for signals that could be hidden behind other parcels or objects in the warehouse. Unlike the use of barcodes, as the drone is flying throughout the warehouse, a tag collision may occur if the reader picks up signals from multiple tags at the same time. Or there is interference caused by metal, water, or other magnetic fields in the warehouse. As the drone is constantly moving throughout the warehouse, there could be signal delay between the RFID tag and the reader. This means that some of the parcels or objects could be missed and not catalogued, therefore the stocktaking records would be inaccurate. In comparison, the barcode system could be more accurate if the operator is careful.

So now that we've unpacked what could be in the six mark response, I encourage you to write a small scaffold and then attempt the question again. Good luck.

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