Examiners' Report
Principal Examiner Feedback

October 2021

Pearson Edexcel International Advanced Level
In Information and Technology
(WIT13) Paper 01

Introduction - historical context

For those reading this report in future years, 2021 was the second, and hopefully last, year when examinations were disrupted by COVID19.

The June 2021 examinations were cancelled, and students were given teacher-assessed grades. This paper was offered in October for students who were unable to get a teacher-assessed grade or were dissatisfied with that grade.

Very few students opted to sit the October examination. As a result, the entry for this examination is very small. This means that statistical information is likely to be unreliable. Even comments such as 'most candidates got both marks for this question' could be misleading as the candidates who took the paper cannot represent the full range of abilities and experience of a 'normal' entry.

Report format

In light of the very small entry, this report will not try to analyse the responses to each item. Most of the short items, where answers are listed in the mark scheme will be dealt with briefly. Instead, it will concentrate on the longer questions, where some examples and commentary might be useful to those preparing students for future examinations. This report should be read in conjunction with the mark scheme.

Report on individual items

1a(i) is about characteristics of big data. The mark scheme lists acceptable answers.
Answers about quantity of data should not be accepted as 'Volume' is in the stem.

1a(ii) is about infrastructure requirements of big data. The mark scheme lists acceptable answers.
Answers about storage capacity should not be accepted as that is in the stem.

1b is about bottlenecks in infrastructure used for processing big data. The mark scheme lists acceptable answers.
Answers require a bottleneck and a matching solution. The bottlenecks must be appropriate to a system that processes big data.

1c(i) asks about the suitability of a DBMS in the scenario of data being stored in several countries.
Answers should relate to the problems of using a DBMS for distributed data/database or the possibility of having unstructured data.

1c(ii) asks how symmetric encryption works. The mark scheme lists acceptable answers.

1c(iii) asks for a reason why symmetric encryption would be used instead of asymmetric encryption in the scenario.
Answers must include the difference in speed plus an expansion explaining why it matters in the context of transmitting big data.

1d(i) asks what is meant by the term 'distributed system'. The mark scheme lists acceptable answers.

1d(ii) asks about concurrency in a distributed system. The mark scheme lists acceptable answers. Answers about concurrency within a simple/single database should not be accepted.

1e(i) asks why passengers in an airport might need a natural language processing, translation service. The mark scheme lists acceptable answers.

1e(ii) asks for a benefit to the airport company from the translation process. The mark scheme lists acceptable answers.
Answers about making the airport more popular or about saving money, without an explanation of the saving, should not be accepted.

1e(iii) asks for a drawback to the passengers of the translation service. The mark scheme lists acceptable answers.
Answers about voice recognition/speech problems should not be accepted as the system is stated to use a keyboard and screen.

2a asks for a set of SMART targets that meet the scenario. The mark scheme gives some examples of acceptable answers.
Other, appropriate SMART objectives should be accepted but ones that simply repeat bits of the scenario with no further expansion should not be credited.

2b is a short essay question about the characteristics of successful IT projects.

This is worth six marks.

The indicative content in the mark scheme includes a wide range of possible characteristics. Good answers do not need to include all the ones shown or even one from each category shown.

The level three descriptor requires 'accurate and relevant knowledge, and a balanced and fully developed discussion'. Balance may be satisfied by discussing characteristics from two or more areas of the indicative content.
Relevancy is likely to be implicit as long as the candidate is discussing project characteristics.

3a is a short practical question, about creating a Gannt chart.

This is worth six marks.

The mark scheme contains six items.
Candidates do not need a complete chart to get full marks as they do not have to put in all the dependencies and constraints.
Incorrect dependencies and constraints should be ignored.

3b is a short essay question about the internet of things (IoT) in the context of the scenario.

This is worth six marks.

The indicative content in the mark scheme includes a wide range of possible advantages and disadvantages. Good answers do not need to include all the ones shown. They should include at least one positive and one negative for both the entertainment system and the engine management system.

The level three descriptor requires 'accurate and relevant knowledge, and a balanced and fully developed discussion'. Balance may be satisfied by discussing at least one positive and one negative for each system. Answers that lean more heavily to e.g. the positive aspects, or to the media system can still get full marks if the other parts are included.
Relevancy may be demonstrated by discussing the systems as applied to a car, as opposed to more general uses of IoT devices.

3c asks how augmented reality could be used to assist the driver of a car when manoeuvring in tight spaces.
The mark scheme lists acceptable answers.

Answers that describe augmented reality out of context may be awarded one mark.

Answers that require implausible systems, e.g. the driver wearing special goggles when using the system may still be awarded the one mark for describing augmented reality if their answer would not otherwise get anything.

4a is a long practical question, about an information flow diagram.

This is worth nine marks.

The mark scheme contains ten items.
Candidates do not need to produce a complete diagram to gain full marks.

There are no specified symbols for an information flow diagram, so anything that is consistent should be allowed.
Sensible/understandable alternatives to component labels and information flow should be allowed.
The diagram in the mark scheme is an example of what a candidate might produce. Other

layouts and content that meet the marking points should be credited.

4b is a short essay question about the information needed when using an intelligent transport system (ITS) to arrange deliveries.

This is worth six marks.

The indicative content in the mark scheme includes a wide range of possible information. Good answers do not need to include all the ones shown or even one from each category shown.

The level three descriptor requires 'accurate and relevant knowledge, and a balanced and fully developed discussion'. Balance may be satisfied by discussing information needs from two or more areas of the indicative content.

Relevancy is likely to be implicit as long as the candidate is discussing the delivery of goods by a transport fleet.

Answers that discuss other types of deliveries, e.g. passengers in buses, may still be awarded marks but are unlikely to be eligible for band 3.

5a is a long practical question, about database normalisation.

This is worth nine marks.

Candidates do not need to produce a complete diagram to gain full marks as errors in a table, e.g. an extra/missing item, may be ignored as long as the table is recognisable.

Sensible/understandable alternatives to table and fields names should be allowed as long as they are used consistently.

The tables/parenthetical format in the mark scheme are examples of what a candidate might produce. Other layouts and content that meet the marking points should be credited.

5b asks how a DBMS could be used to handle security in a database. The mark scheme gives some examples of acceptable answers.

Answers about alternative types of login, e.g. using biometrics, should not be accepted as a login method is the example given in the stem.

6a is a long essay question about the partial replacement of human, customer services agents with chatbots.

This is worth twelve marks.

The indicative content in the mark scheme includes a wide range of possible information. Good answers do not need to include all the ones shown.

They should include:
- an indication of how a chatbot works
- advantages and disadvantages of the proposed change
- a conclusion.

The level three descriptor requires 'accurate and relevant knowledge, and a balanced and fully developed discussion'. Balance may be satisfied by discussing both advantages and disadvantages.
The accurate and relevant knowledge is likely to be satisfied by an appropriate description of how a chatbot system works.

Relevancy is likely to be implicit as long as the candidate is discussing the introduction of the new system.

Answers that discuss other types of automated systems, e.g. customers picking responses from nested menus, may still be awarded marks but are unlikely to be eligible for band 3.