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LAPORAN PEPERIKSAAN
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Information and Communications Technology (ICT) (958)

INFORMATION AND COMMUNICATIONS TECHNOLOGY 958/1

OVERALL PERFORMANCE

The number of candidates for this subject was 590. The percentage of candidates who obtained a full pass was 52.54%.

The achievement of candidates according to grades is as follows:

Grade	A	A–	B+	B	B–	C+	C	C–	D+	D	F
Percentage	8.64	2.54	2.88	3.90	10.34	11.02	13.22	13.90	15.08	8.47	10.00

RESPONSES OF CANDIDATES

General comments

Overall, the questions were clear and well structured. They fulfilled the coverage of the syllabus with appropriate difficulties for the study level. Questions 3(b) and 6 were among the challenging questions.

Overall, the question paper contained a mixture of both high order and low order thinking skills of (HOTS and LOTS) questions. Question 6 appeared to be more technical than question 7, hence the popularity of question 7 was more popular compared to question 6.

Most answers provided by the candidates were presented clearly and explained well. Most candidates answered the questions according to its order and chose question 7 compared to question 6. Most of the candidates answered in English and only 38% answered in Bahasa Melayu.

Candidates' strengths could be seen in question 2. Although only a few candidates were able to attain full marks for the question, it could be seen that candidates answered the question by relating it to their own experience in online buying and selling.

Of those candidates who answered question 7, this question had contributed to their good marks as this question had allowed them to relate to their experience in developing their multimedia related projects.

As for weaknesses, question 3 was a difficult question for most candidates, particularly for part 3(b). Of those who answered part 3(a), some were found to be unable to answer part 3(b) correctly. Part 3(b) was about an elaboration of the concepts relating to the answers in part 3(a).

Comments on the individual questions

Question 1

This question consists of two parts. For part (a), the question was an easy question that asked for the definition of data, information, and knowledge. It could be seen that candidates had given answers in the context of the preamble given.

For part (*b*), the question was also an easy question about the advantages and disadvantages of the touch screen technology that had allowed candidates to relate to their experience with a smartphone. However, a few candidates provided answers beyond the context of the technology such as giving answers from medical perspectives, which were creative in a sense but unfortunately incorrect.

Question 2

This was a question on hypermarket going digital. This was an easy question and candidates displayed their strengths by relating to their own experience in online buying and selling. Most of the candidates were able to answer correctly.

Question 3

This question consists of two parts. This was one of the challenging questions of the paper as it asked about the abstract concepts relating to the principles of design. It was interesting to note that of those who were able to answer part (*a*), only a few were able to answer part (*b*), which was just a question to elaborate on part (*a*) straight from a reference book. This might indicate that candidates had difficulties in understanding the concept.

Question 4

This question was about contrasting between delivering multimedia applications at locations without internet and with internet. It was an applied question on the mediums of multimedia delivery. Only a few candidates gave an answer of projector, which was a peripheral device for delivering multimedia. This might indicate that candidates were not clear on the distinction between main and peripheral apparatus of multimedia.

Question 5

This question was about the elements in the alpha and beta development stages. Most candidates were able to answer part (*a*) but not for part (*b*). Part (*a*) was asking them to differentiate between a storyboard and a flowchart. Candidates seemed to understand what storyboard and flowchart were but most had difficulty in providing answers for differentiating between them. Thus, they lose marks since both answers had to be contrasting to be considered as correct.

Question 6

This question was one of the challenging questions that required candidates to name a specific technology related to video call (i.e., VoIP), instead candidates provided the name of the application they used such as Meet and Zoom. Candidates were seen to be poor at drawing an overview diagram of a voice over internet protocol (VoIP) system. Most candidates were missing the internet service protocol (ISP) as one of the components in a VoIP system. Also, they missed that the connections in a communication had to be two-ways. Thus, this might have contributed to its non-popularity compared to question 7.

Question 7

The question consists of three parts. This question was considered as moderate question that needed candidates to recall the elements of multimedia. Most candidates who answered this question were able to obtain marks. However, few of them were able to provide examples of the multimedia elements that were specific to part (b). Similarly, in part (c), some of the candidates either did not answer or provided a wrong answer when asked for an interactive element in a website project.

INFORMATION AND COMMUNICATIONS TECHNOLOGY 958/2

OVERALL PERFORMANCE

The number of candidates for this subject was 580. The percentage of candidates who obtained a full pass was 58.96%.

The achievement of candidates according to grades is as follows:

Grade	A	A–	B+	B	B–	C+	C	C–	D+	D	F
Percentage	11.72	5.00	6.72	6.72	8.97	7.59	12.24	6.03	6.72	5.34	22.93

RESPONSES OF CANDIDATES

General comments

Overall, all the questions reflected the contents with the ICT STPM syllabus and Bloom Taxonomy which includes some low order thinking skills (LOTS) and high order thinking skills (HOTS) questions. In general, most candidates were able to provide correct answers to some of the questions. For question at the simple level, most of the candidates were able to provide the correct answers. For questions at the moderate level of difficulties, about half of the candidates were able to provide correct answers.

Generally, most of the candidates were able to answer question in C programming language. Common mistakes found included syntax errors, unable to trace code execution to derive output generated by the code and did not attempt the program code interpretation correctly.

There were a few categories of candidates. The first category of candidates who essentially mastered the programming language and able to provide accurate answers. The second category of candidates provided answers with some errors. The third category of candidates were not able to provide any suitable or correct answers.

Comments on the individual questions

Question 1

For part (*a*), candidates were asked to state four differences between assembly and high-level procedural languages. Most of the candidates were able to provide the correct answer for this question.

For part (*b*), candidates were asked to state the type of translator used for C programming language. Most of the candidates were able to give the correct answer for this question.

Question 2

This question required candidates to write code segment in C for the given flowchart. The intention of the question was to assess the candidate's knowledge in code segment in C for the given flowchart. Most of the candidates were able to answer correctly.

Question 3

The intention of this question was to assess the candidate's knowledge in designing an algorithm using pseudocode. Candidates were expected to be able to write pseudocode for the problem using a selection control structure. Many candidates successfully wrote the algorithm using pseudocode. The question was quite easy but some of the candidates were not able to write a pseudocode correctly; it seemed that the candidates did not have enough knowledge to answer the questions.

Question 4

For part (*a*), candidates were asked to write a function `checkOdd_Even` that accepts an integer and displays a message "Even Number" if the integer is an even number or "Odd Number" if the integer is an odd number. Some candidates wrote the functions with some missing statements or syntax errors. This showed that some candidates did not understand what was expected from the questions. They were also not able to understand clearly on the function concept.

For part (*b*), candidate were asked to write the output for the code segment and rewrite the code segment in C using `for` loop. This was quite an easy question, but most of the candidates were unable to write the output for the segment program.

Question 5

For part (*a*), candidates were asked to write a `struct  appliance` definition statement in C to store the information for home appliances and print total salary in a shop.

For part (*b*), candidates were asked to write a code segment in C to read and store the information of 120 appliances in an array of `struct  appliance` and to print stored the information of all appliances. Many candidates attempted to answer this question because the problem was quite straightforward. But some candidates could not answer this `struct` type question because the candidates were not skilful enough and might be did not really understand this topic.

Question 6

This question consists of two parts. For part (*a*), candidates were required to write a complete program to generate a triangular shape using loops based on a value entered by a user. This question was considered quite difficult for candidates to answer. Majority of the candidates were not able to answer the question correctly.

For part (*b*), there were another three parts for candidates to answer. For part (*b*)(i), candidates were asked to describe the difference between syntax and logic error. Most of the candidates were able to describe one difference between syntax error and logic error; so they provided the correct answer for this question. For part (*b*)(ii), the question asked candidates to convert the algebraic expression to the equivalent statement in C. Most of the candidates were also able to convert the algebraic expression to the equivalent statement in C.

For part (b)(iii), candidates were asked to write a code segment in C that accepts any integer number and determine and display the last digit entered by a user. The question was quite easy but some of the candidates were not able to write a program in C correctly; it seemed that the candidates did not have enough knowledge.

Question 7

This question consists of two parts. For part (*a*), candidates were required to write a declaration statement in C for the two-dimensional array and initialise the marks of two assignments for six students.

For part (*b*), candidates were required to write a code segment in C to calculate the average marks of two assignments for each student and determine the number of students who obtained the passing mark. Some candidates did not attempt to answer this question. It was a high order thinking skills (HOTS) question. Many candidates failed to answer these questions correctly. This showed that most candidates did not understand what was expected from the questions. They were also not able to understand clearly the two-dimensional array concept.

INFORMATION AND COMMUNICATIONS TECHNOLOGY 958/3

OVERALL PERFORMANCE

The number of candidates for this subject was 571. The percentage of candidates who obtained a full pass was 54.70%.

The achievement of candidates according to grades is as follows:

Grade	A	A–	B+	B	B–	C+	C	C–	D+	D	F
Percentage	10.16	1.93	6.48	3.85	10.51	8.76	12.61	13.13	13.66	5.43	13.49

RESPONSES OF CANDIDATES

General comments

All questions were relevant and met the standard of Information and Communication Technology syllabus. It covered the major topics of Information System Development. The questions were also quite easy to understand and very straight forward.

Most of the candidates' answers were given in general. Their explanation showed that they did not truly understand the topics. Therefore, they failed to give the core and right answers as in the marking scheme. They only managed to explain things on the surface allowing them to obtain only a few marks and answered not according to the requirements of the question.

From the students' answers it showed that the students were good on technical questions especially for questions involving Structured Query Language (SQL), entity relationship diagram (ERD) or data flow diagram (DFD). They were extremely poor with questions that required explanation or definition. The students were also poor at understanding the situation involved in every phase of the system development.

Comments on the individual questions

Question 1

The question required the student to describe the two importance of technical, managerial and interpersonal skills in relation to a system analyst's responsibilities. Not all students were able to obtain full marks for this question. Most answers were very general. They were unable to divide the skills of system analyst into technical, managerial, and interpersonal. The students' answers focused more on how a system analyst needs to take care of a completed system, how to take care of data and information, not to an organisation or other elements of the information system such as people, hardware, software, and procedure during the system development.

Question 2

Many candidates were unable to answer part (*b*) which was related to the system development model. Most students got the ideas of waterfall model from the scenarios given in the questions. The question was divided into two parts. In part (*a*) the students were asked to state the type of system development model. Many students managed to give the right answer, which was the waterfall model or system development life cycle (SDLC). However, there were also many students who gave spiral model as their answers. In part (*b*), students were required to justify their answers for part (*a*) by giving three advantages of the chosen model. Most students were unable to explain the advantages of the waterfall model.

Question 3

This question required the students to; (*a*) define data integrity, and (*b*) explain three advantages of database systems compared to file processing systems in terms of data integrity. Not many students were able to give a precise definition for data integrity. Most students could only give one or part of the answer which allowed them to score only one mark. Students tend to give long explanations that carried the same meaning.

For part (*b*), many students obtained at least 2 to 4 marks. The main weakness in their answers was that they could not give a precise answer. Most of the answers given were more of a statement without giving a complete explanation or accurate examples.

Question 4

This question consists of two parts. Part (*a*)(i) was a recall question, but many candidates failed to give the meaning of an entity set. In part (*a*)(ii), most of the candidates could answer this question. In part (*b*), the question asked candidates to identify the suitable cardinality for the relationship between the two entities given. Some of the candidates could not answer this question. In part (*c*), some candidates were unable to answer the question.

Question 5

Based on the table, four corresponding SQL expressions were given. The students were required to provide four outputs which were related to each of the SQL expressions. Most of the students managed to get full marks. This type of question showed that most of the students preferred technical questions compared to the theoretical questions.

Question 6

Most candidates were unable to answer part 6(*a*) completely and accurately while in part 6(*b*), most of the candidates were able to answer by drawing a context diagram of the system for the scenario given even though they could not get full marks.

Question 7

Many students answered this question. Most of the students managed to obtain marks for part (*a*), which was to state three importance of normalisation.

For part (*b*), many types of answers were presented by the candidates to construct a relational database schema. The answers were perceived based on how they understood the form. For part (*c*), surprisingly many students managed to answer the question. About half of the candidates were able to get six to nine marks for this question.