



EXAMINATIONS AND ASSESSMENT CHIEF DIRECTORATE

Home of Examinations and Assessment, Zone 6, Zwelitsha, 5600

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2020 NSC CHIEF MARKER'S REPORT

SUBJECT	COMPUTER APPLICATION TECHNOLOGY
PAPER	2
DURATION OF PAPER:	3 hours

SECTION 1: (General overview of Learner Performance in the question paper as a whole)

The 2020 Computer Application Technology Paper 2 attempted to offer something from across the CAT syllabi from Grade 10 to Grade 12. It represented a good balance between the “elementary” basic concepts, to the more demanding interpretation and analysis of technology information. In some instances, the paper also required a lot of experience and exposure to the Computer World as well as a lot of application. The content is sometimes being embedded in real life scenarios and therefore some of the students struggled to identify with it.

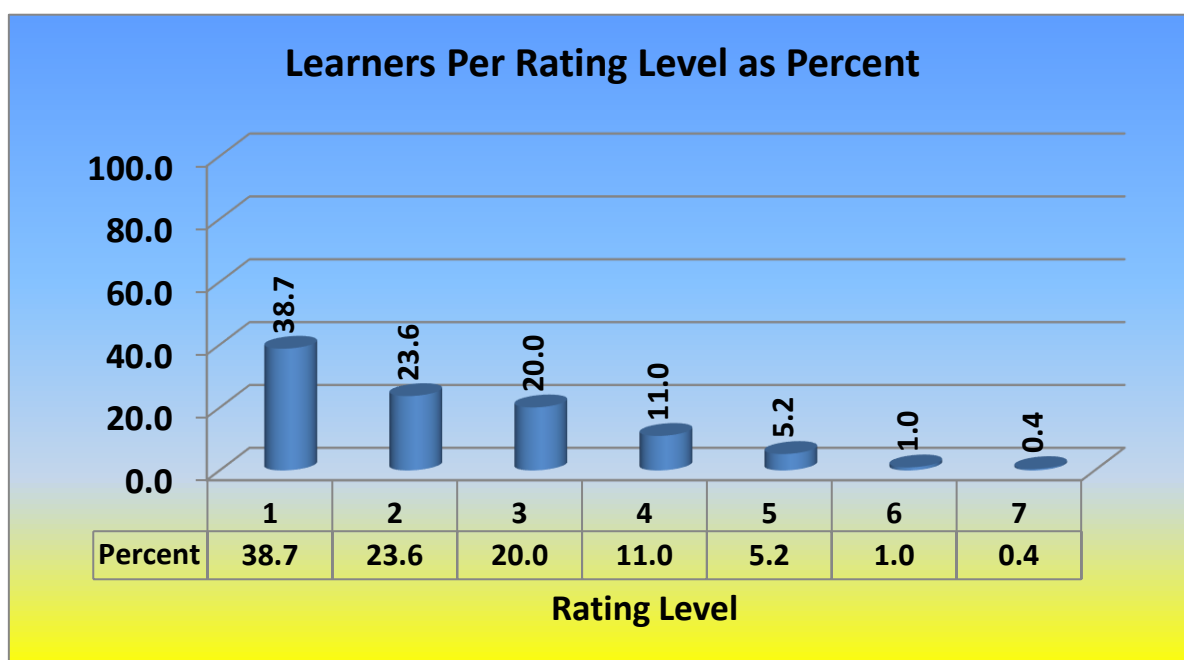
Many educators as well as candidates rated the paper as being fair and appropriate, but not easy. The learners did not know how to interpret some of the questions and therefore only answered the questions in general.

It is generally accepted that CAT has evolved into a more analytical and technical subject and success in the subject is dependent on hard work, thorough preparation and dedication.

Many candidates still lack the skills and knowledge required to answer even the easy questions. Students from more affluent, technology inclined households would have had an advantage but not the rest. The COVID-19 pandemic has affected educational systems worldwide and the impact was more severe for disadvantaged children, causing interrupted learning and the lack of student to teacher interaction has also led students feeling less passionate about the integrity of their work. Therefore, there will be a widespread of candidates that will perform very well, average as well as poorly.

Once again, a large percentage of the learners in the Eastern Cape failed to achieve 40%. They have as usual achieved much lower marks in Paper 2 than in Paper 1. This is clearly an indication of the level of preparation and commitment to the task. It is often claimed that the diverse socio-economic background and the availability of resources play a significant role in the NSC results. It is time that individuals take responsibility for their success by going the extra mile.

The graph below shows the overall performance of the learners in the Eastern Cape. We are pleased to announce that the marks increased from 2019 to 2020 with 3%.



As can be seen from the graph below, 61.3% of learners in the Eastern Cape passed this examination (2020) compared to 58.1% last year (2019) and 60.9% in (2018).

2018		
Total wrote		3537
% Passed		60.9
Levels	Total	Percent
1	1384	39
2	898	25.4
3	642	18.2
4	404	11.4
5	169	4.8
6	38	1.1
7	2	0.1
		3537 100

2019		
Total wrote		3519
% Passed		58.1
Levels	Total	Percent
1	1473	41.9
2	846	24.0
3	603	17.1
4	372	10.6
5	159	4.5
6	52	1.5
7	14	0.4
		3519 100

2020		
Total Wrote		3772
% Passed		61.3
Levels	Total	Percent
1	1461	38.7
2	892	23.6
3	756	20.0
4	414	11.0
5	197	5.2
6	36	1.0
7	16	0.4
		3772 100.0

All

by entering the results of 100 random sample scripts. Please note that this does not reflect the most accurate picture as it is very difficult to extract a sample of 100 scripts which would be 100% representative of the performance of the Eastern Cape.

More learners completed the question paper this year and not many questions were left undone. There are still too many learners that lack the skills and knowledge required to answer even the easy questions.

More textbook content must be included in the theory question paper. These may be higher level questions. Some questions come over as being too technical for CAT. Therefore, markers also need to be trained to be more divergent in their thinking and award marks to comments that go beyond the marking guideline.

It will also be to the advantage of the learners if they can receive both the English and Afrikaans versions of the paper.

As mentioned earlier, learners are still performing better in the practical paper than in the theory paper.

- The obvious reason for this is the language barrier of candidates. Learners do not always understand and interpret the questions correctly and if they do, they do not have the vocabulary to express themselves correctly. This results in responses from learners that are very difficult to read and to understand. Although everything in our power is done to accommodate the language barrier of learners and even that of many teachers who teach in their second language, there is only so much that can be done. Teachers and learners should do everything in their power to improve their English language.
- Teachers do not spend enough teaching time on preparing learners for the theory paper and learners do not study for CAT theory. Teachers and learners must realise that theory is just as an important component in the CAT syllabus and that it contributes the same weight in the overall mark for CAT.

Because the suggestions for improving teaching and learning (Section C) as well as the useful comments to teachers (Section E) are very much the same for all the different questions, these are discussed generally at the beginning of the report and then just referred to it in the discussion of the different questions.

GENERAL COMMENTS ON IMPROVING THE TEACHING AND LEARNING OF CAT THEORY

- **More time and effort should be spent on teaching theory by following the instructions in the CAPS document as well as the exam guideline.** Teachers should explain the theory and make sure that learners understand what they are learning. Teachers should teach theory in a practical way. Bring examples of technology and demonstrate how it works. **Research should be done on new concepts and new technology evolving.**

- **CAT is a very dynamic subject.** Teachers must therefore make a concerted effort to keep up with this new technology and bring their learners into contact with new technologies on a regular basis. Teachers will be informed once a year of new technology that may be assessed in addition to the existing content of the CAPS syllabus. This will be added to the examination guideline document which will be released once a year.
- **Learners can also be challenged to come and share new technologies** which they come across in class. This can also be done as part of a homework or class activity. Encourage learners to browse for new technology on the Internet or find advertisements in local media. They can bring these to school where they can be discussed in class. Teachers can also make use of experts in the field of technology to explain and demonstrate some of the latest technologies to learners.
- **Teachers are advised to consult more than one textbook when teaching theory as well as to make sure that they know the content of the CAPS document and what is required from CAPS.** There are three approved textbooks available for CAT. Books approach topics from different angles and can even have additional information on topics. It can only be to the learners' advantage to consult more than one textbook.
- **Learners should also be given regular theory tests** based on the format of examination papers. The results of these tests (learner's responses) should be discussed with them – not just handed back. They should know why they lost marks.
- Although time is limited, teachers should try and **work through some question papers of previous years.** The memos of these papers should be discussed with learners to train them how to approach and answer a question paper as well as learning the content.
- Teachers should **teach learners to use the correct terminology** in class as well as how to answer questions. They should not be allowed to answer questions by using words such as *it, things ... etc.*
- **Grade 10 and 11 content:** Teachers are reminded that according to the CAPS syllabus, learners are assessed on all theory done from grade 10–12 in the final examination. Learners should therefore keep summaries of their grade 10 and 11 theory in notebooks. Throughout the grade 12 year, teachers should incorporate grade 10 and 11 knowledge in tests to prepare learners for the final examination.

NOTE TO SUBJECT ADVISORS:

- CAT is still a new and very dynamic subject. Many teachers do not have the training or support to continually provide quality education to learners. Subject advisors should play a more active role in assisting teachers in gaining the needed knowledge and expertise. Subject advisors should also make sure that all schools receive the new and updated examination guidelines as well as new terminology for the new year and make sure they use these documents in their teaching. Short training courses presented by themselves or other specialist teachers can only benefit this valuable subject.
- There are also schools that do not have the necessary hardware, software and Internet access to offer this subject. We would also appeal to the department and subject advisors to play a supportive role in this regard – especially in schools where there are trained teachers available.

MISTAKES MADE BY LEARNERS IN ANSWERING THE PAPER:

The following mistakes were experienced and teachers are encouraged to discuss this with their learners.

- **Learners giving one-word answers.** It often happens that learners respond with only one word to a question to list advantages/disadvantages/ characteristics. It is impossible for markers to judge from that whether the learner knows the work. No marks will be awarded in such cases. Other learners again, write paragraphs instead of sentences – often contradicting their answer. This must also be discouraged.
- **Vague and generic answers.** Some learners, when they do not really know the answer, often fall back on vague and generic answers such as “it is easier and faster” and terms like “things” and “stuff” etc. Answers like these which do not include any motivation, reason or an explanation or the correct terminology which can be used to judge a learner’s comprehension will not earn any marks and should be discouraged. This statement is clearly outlined in the instructions and information at the beginning of the question paper (instruction number 10).
- **Learners do not read the questions/scenarios/instructions properly.** They read until they think they know the answers, or they only notice some keywords and then they assume the rest of the question. Learners should be encouraged to read the whole question slowly and with comprehension before attempting to answer it. In many scripts it is clear that learners are losing marks because they do not read the questions properly. A lot of students tend to re-write the question as their answer. This is completely unacceptable. Learners should also be encouraged to read the instructions at the beginning of the question paper.

- **Mark allocation.** Teachers should indicate to learners that the paper is marked on a “one mark per fact” basis. Thus, if a question is indicated to count two marks, they need to write down two facts.
- **Handwriting.** As with all subjects, handwriting is a problem with many candidates where markers have difficulty deciphering the handwriting in order to mark the script.
- **Answering of questions.**
 - Start each new question on a new page.
 - Leave a line open between questions.
 - Answer the questions in the order they appear on the question paper.
 - Keep sub-sections of a question together.
 - Use the numbering system as indicated on the question paper for each question.
 - If learners decide not to attempt a subquestion of a question, they must at least write the number of the question so that markers can clearly see that a question has been left out. It makes it very difficult for markers who mark under a lot of pressure to lose time in an attempt to look for the correct answers.
 - **Some of the learners did not adhere to the instructions in the question paper. According to the instructions learners are not allowed to just write: “cheaper”, “faster”, “easier”, etc.**

SECTION 2:

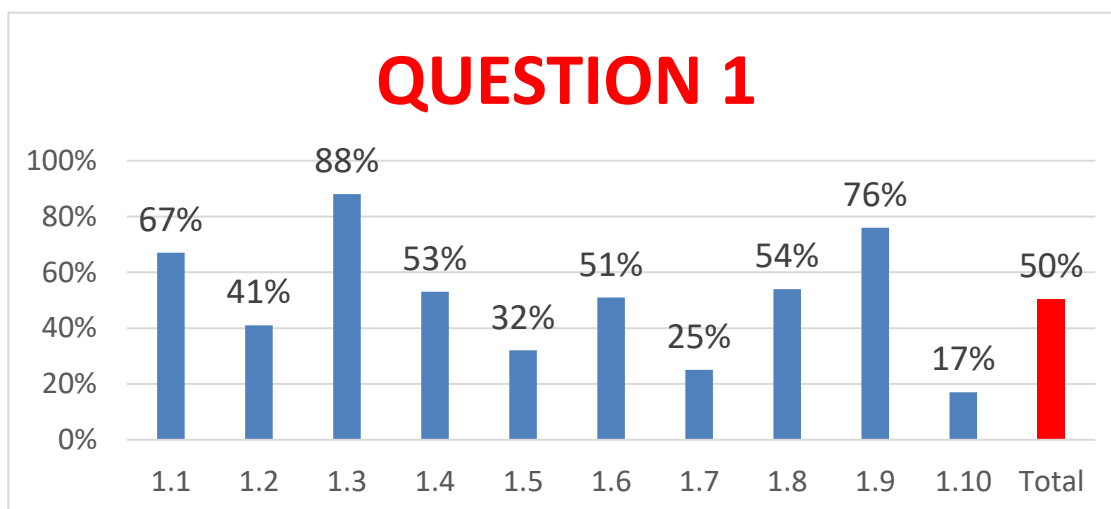
Comment on candidates' performance in individual questions

(It is expected that a comment will be provided for each question on a separate sheet).

QUESTION 1

- (a) General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?

Average mark from the sample of 100 :		5/10
SUB-QUESTION	TOPIC OR ASPECT TESTED	AVERAGE % FROM SAMPLE
1.1 – 1.10	MATCHING ITEMS	50%



Question number	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	1.10	Total
Question Value	1	1	1	1	1	1	1	1	1	1	10
Maximum	1	1	1	1	1	1	1	1	1	1	10
Minimum	0	0	0	0	0	0	0	0	0	0	1
Average	67%	41%	88%	53%	32%	51%	25%	54%	76%	17%	50%
Median	1	0	1	1	0	1	0	1	1	0	5

Distribution of marks	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	1.10
	1	1	1	1	1	1	1	1	1	1
0	33%	59%	12%	47%	68%	49%	75%	46%	24%	83%
1	67%	41%	88%	53%	32%	51%	25%	54%	76%	17%

The performance of learners in this question was average. The learners performed better in Question 2 than in Question 1.

(b) Why was the question poorly answered? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.

Questions were quite straightforward for those who prepared well for the examination. The following questions were poorly answered by the majority of learners. Teachers should take note and act accordingly:

Q 1.5

Practical question.

Q 1.7

Learners struggled with this question. Seems as if learners were not exposed to the new technology that was issued by the department in 2019.

Q 1.10

Practical question.

(c) Provide suggestions for improvement in relation to Teaching and Learning.

Learners should be taught to arrive at an answer adopting a process of elimination: selecting the most probable answers and then removing them one by one.

Also refer to the general comments in Section 1 of this report for more comments and suggestions which could help teacher developments as well as advantage our learners.

(d) Describe any other specific observations relating to responses of learners and comments that are useful to teachers, subject advisors, teacher development etc.

Many learners continue not to answer some of the questions which is quite surprising, or they tend to write down two options (A/B) as if the marker will choose between the 2 answers. Although this question is not a guessing game, learners should be encouraged to at least try an answer out of the options left. Teachers are encouraged to teach their learners to answer this question using the answer sheet provided.

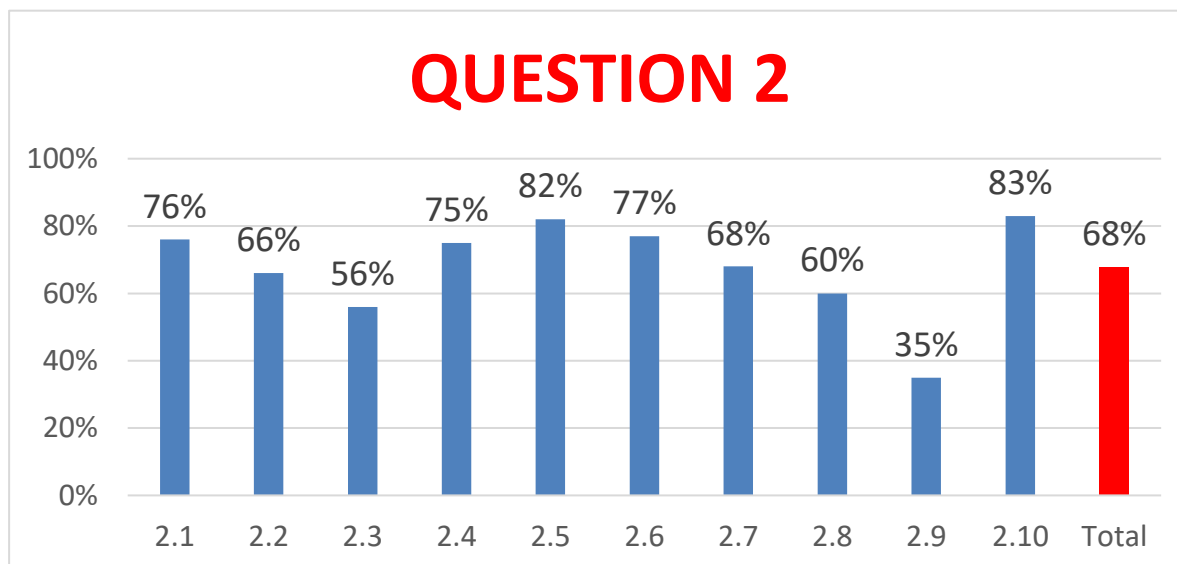
(e) Any other comments useful to teachers, subject advisors, teacher development etc.

Refer to the general comments in Section 1 of this report.

QUESTION 2

(a) General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?

Average mark from the sample of 100:		6.8/10
SUB-QUESTION	TOPIC OR ASPECT TESTED	AVERAGE % FROM SAMPLE
2.1 – 2.10	MATCHING ITEMS	68%



Question number	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	2.10	Total
Question Value	1	1	1	1	1	1	1	1	1	1	10
Maximum	1	1	1	1	1	1	1	1	1	1	10
Minimum	0	0	0	0	0	0	0	0	0	0	1
Average	76%	66%	56%	75%	82%	77%	68%	60%	35%	83%	68%
Median	1	1	1	1	1	1	1	1	0	1	8

Distribution of marks	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	2.10
	1	1	1	1	1	1	1	1	1	1
0	24%	34%	44%	25%	18%	23%	32%	40%	65%	17%
1	76%	66%	56%	75%	82%	77%	68%	60%	35%	83%

The performance of learners in this question was good. Some of the learners even obtained full marks for this question.

(b) Why was the question poorly answered? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.

Questions were quite straightforward for those who prepared well for the examination. Question 2.9 was the only question that was answered poorly in comparison with the rest. The reason therefore is that students don't know the term botnet.

(c) Provide suggestions for improvement in relation to Teaching and Learning.

Learners should be taught to arrive at an answer adopting a process of elimination by selecting the most probable answers and then removing them one by one.

(d) Describe any other specific observations relating to responses of learners and comments that are useful to teachers, subject advisors, teacher development etc.

Many learners continue not to answer some of the questions which is quite surprising, or they tend to write down two options (A/B) as if the marker will choose between the 2 answers. Although this question is not a guessing game, learners should be encouraged to at least try an answer out of the options left. Teachers are encouraged to teach their learners to answer this question using the answer sheet provided.

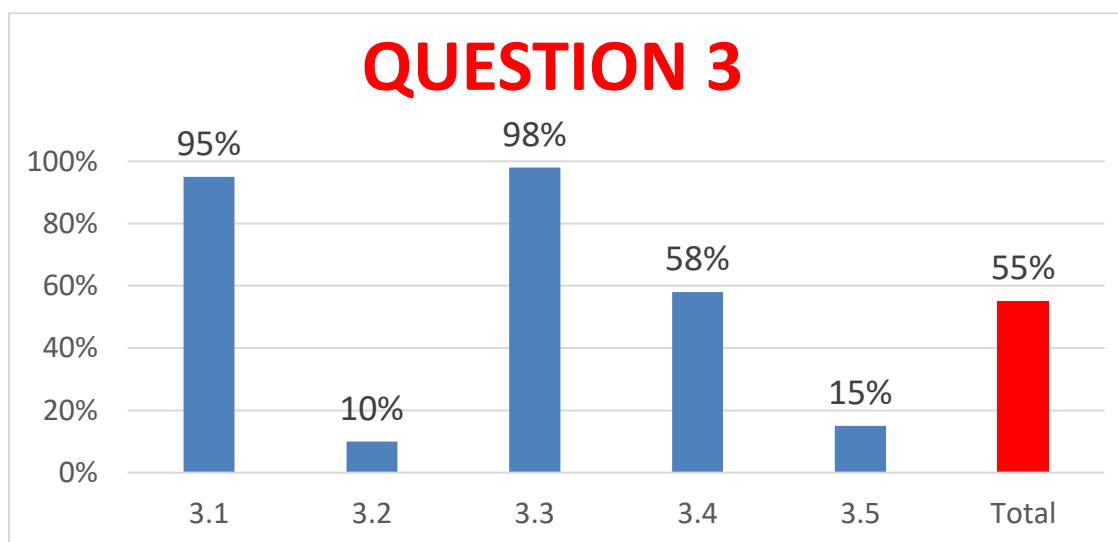
(e) Any other comments useful to teachers, subject advisors, teacher development etc.

Also refer to the general comments in Section 1 of this report for more comments and suggestions which could help teacher developments as well as advantage our learners.

QUESTION 3

(a) General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?

Average mark from the sample of 100 :		2.75/5
SUB-QUESTION	TOPIC OR ASPECT TESTED	AVERAGE % FROM SAMPLE
3.1 – 3.5	TRUE/FALSE ITEMS	55%



Question number	3.1	3.2	3.3	3.4	3.5	Total
Question Value	1	1	1	1	1	5
Maximum	1	1	1	1	1	5
Minimum	0	0	0	0	0	1
Average	95%	10%	98%	58%	15%	55%
Median	1	0	1	1	0	3

Distribution of marks	3.1	3.2	3.3	3.4	3.5
0	5%	90%	2%	42%	85%
1	95%	10%	98%	58%	15%

The performance of learners in this question varied from good to very poor.

(b) Why was the question poorly answered? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.

Learners still battled with the question this year.

Learners are still not used to a question of this format where they had to identify whether a statement is true or false AND then make the false statements true by changing the underlined concept/term.

The question was thus misunderstood by many learners. Some of the learners changed the statement to make the underlined word true instead of changing the word to make the statement on the question paper true. Some learners only write false without the correct word next to it.

It is believed that with some input by teachers, the learners can do much better in this question in the future.

Question 3.2 and 3.5 were poorly answered by most learners – learners don't learn Grade 11 work (licenses) and were clearly not exposed to the term: information overload .

(c) Provide suggestions for improvement in relation to Teaching and Learning

Teachers should train the learners to answer questions of this format by explaining to them how to attempt a question of this nature. They should then also expose learners to questions of this type in class tests and examination during the year. Practice from old question papers as well.

(d) Describe any other specific observations relating to responses of learners and comments that are useful to teachers, subject advisors, teacher development etc.

This type of question might seem very easy, but to successfully answer a question of this format, learners should be taught to read the statements a few times with concentration and understanding.

Teachers should pay attention to this during the year. This is something that learners should be taught and exposed to.

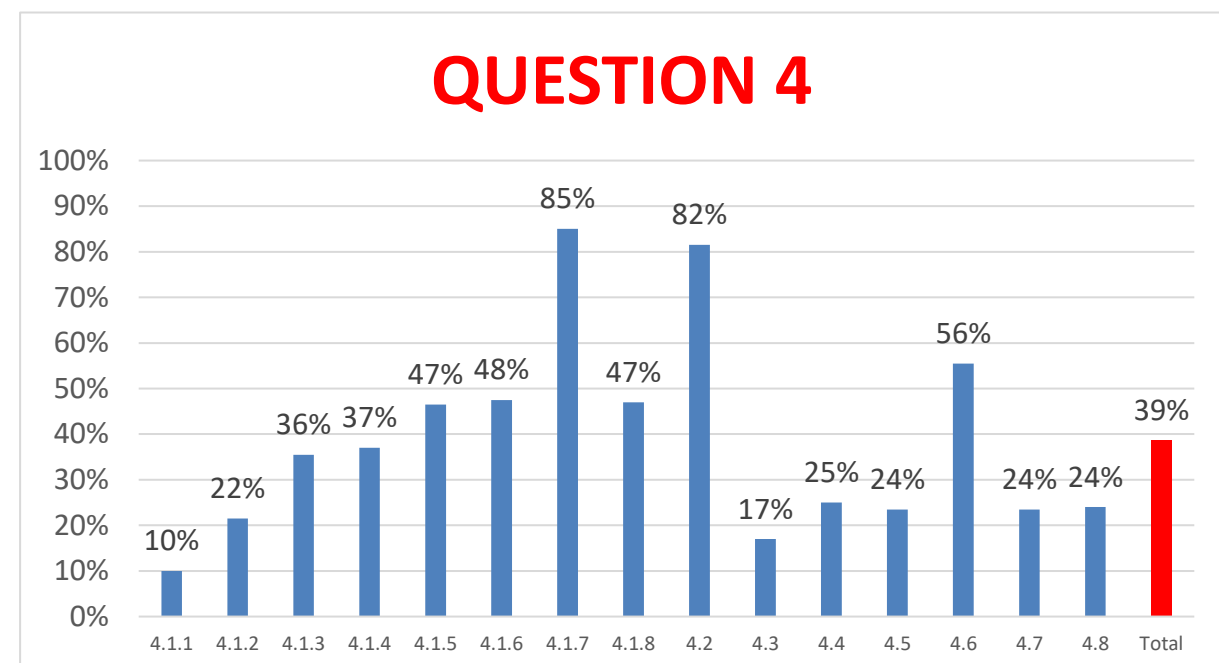
(e) Any other comments useful to teachers, subject advisors, teacher development etc.

Also refer to the general comments in Section 1 of this report for more comments and suggestions which could help teacher developments as well as advantage our learners.

QUESTION 4

(a) General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?

Average mark from the sample of 100 :		9.8/25
SUB-QUESTION	TOPIC OR ASPECT TESTED	AVERAGE % FROM SAMPLE
4.1 – 4.12	SYSTEMS TECHNOLOGIES	39%



Question number	4.1.1	4.1.2	4.1.3	4.1.4	4.1.5	4.1.6	4.1.7	4.1.8	4.2	4.3	4.4	4.5	4.6	4.7	4.8	Total
Question Value	1	2	2	1	2	2	2	1	2	1	2	2	2	1	2	25
Maximum	1	2	2	2	2	2	2	1	2	1	2	2	2	1	2	24
Minimum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Average	10%	22%	36%	37%	47%	48%	85%	47%	82%	17%	25%	24%	56%	24%	24%	39%
Median	0	0	0	0	1	1	2	0	2	0	0	0	1	0	0	11

Distribution of marks	4.1.1	4.1.2	4.1.3	4.1.4	4.1.5	4.1.6	4.1.7	4.1.8	4.2	4.3	4.4	4.5	4.6	4.7	4.8
1	90%	61%	52%	65%	35%	35%	13%	53%	4%	83%	58%	55%	30%	53%	65%
2	10%	35%	25%	33%	37%	35%	4%	47%	29%	17%	34%	43%	29%	47%	22%
3	0%	4%	23%	2%	28%	30%	83%	0%	67%	0%	8%	2%	41%	0%	13%

The learners' response to this question was disappointing, upsetting and not up to standard.

In cases where learners performed poorly it was mainly due to:

- Not answering questions in full sentences
- Not motivating their answers where needed
- Not reading the questions properly. They read questions only until they thought they knew what was requested but often misinterpreted the question.
- Lack of content knowledge.

- Learners seemed to read only the first part of the question and assumed what the rest of the questions would look like. In other cases, they identified key words in the question and repeated the question as part of their answer.

(b) Why was the question poorly answered? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.

The following questions were poorly answered by the majority of learners. Teachers should take note and act accordingly:

Q 4.1.1

Poor response from learners. The learners clearly did not have any idea that Office 365 belongs to application software. This is Grade 10 theory.

Q 4.1.2

Poor response from learners. Learners did not understand what was expected from them. This question was not asked the traditional way and confused the learners. The question paper asked possible reasons why screen resolution is indicated **in addition** to screen size in the specifications. This is Grade 10 work they needed to recall.

Q 4.3

Poor response from learners. Learners did not explain the meaning of backwards compatibility.

Q 4.4

Learners struggled with this question. Most answers related to storage. This is also Grade 10 work they needed to recall.

Q 4.5

Poor response from learners. Learners were not exposed to term safe mode.

Q 4.7

Learners struggled with this question. This is Grade 11 work they needed to recall.

Q 4.8

If a learner could not answer question 4.7, it is most likely that they would struggle with this question as well.

(c) Provide suggestions for improvement in relation to Teaching and Learning.

- Teachers should spend more time showing learners how to read a question in its entirety and explain how to break the question up into smaller sections to make it easier to understand. They should also be shown how to identify what the question wants with regards to advantages, disadvantages, reasons, etc.
- It seemed as if teachers did not revise Grade 10 and 11 theory.

(d) Describe any other specific observations relating to responses of learners and comments that are useful to teachers, subject advisors, teacher development etc.

- As with most other questions, learners did not read with comprehension. This might be due to a number of factors such as a language barrier or from skipping sections of the question and only focusing on specific keywords.
- Learners did not understand basic terminology which should have been engrained since Grade 10.
- As mentioned at the start of this report, many learners tend to write very vague answers using words like “this”, “things”, “stuff”, “fast”, “easy” etc. instead of the correct terminology.

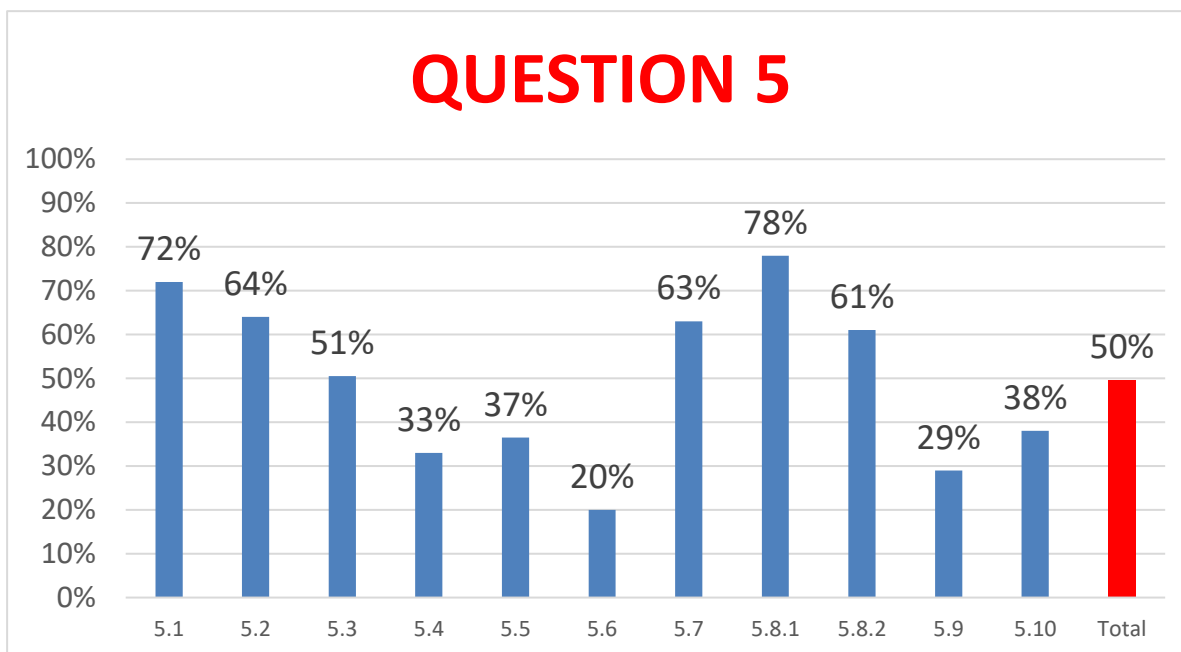
(e) Any other comments useful to teachers, subject advisors, teacher development etc.

Please refer to the general comments at the start of this section for comments, suggestions and general ideas which could help teacher development as well as advantage our learners.

QUESTION 5

(a) General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?

Average mark from the sample of 100 :		7.5/15
SUB-QUESTION	TOPIC OR ASPECT TESTED	AVERAGE % FROM SAMPLE
5.1 – 5.10	INTERNET AND NETWORK TECHNOLOGIES	50%



Question number	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8.1	5.8.2	5.9	5.10	Total
Question Value	1	2	2	1	2	2	1	1	1	1	1	15
Maximum	1	2	2	1	2	2	1	1	1	1	1	14
Minimum	0	0	0	0	0	0	0	0	0	0	0	0
Average	72%	64%	51%	33%	37%	20%	63%	78%	61%	29%	38%	50%
Median	1	1	1	0	0	0	1	1	1	0	0	7

Distribution of marks	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8.1	5.8.2	5.9	5.10
0	28%	14%	21%	67%	51%	65%	37%	22%	39%	71%	62%
1	72%	44%	57%	33%	25%	30%	63%	78%	61%	29%	38%
2	0%	42%	22%	0%	24%	5%	0%	0%	0%	0%	0%

The performance of learners in this question was average. In cases where learners performed poorly it was mainly due to:

Lack of content knowledge, using wrong terminology as well as getting confused with some of the terminology.

(b) Why the question was poorly answered? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.

The following questions were poorly answered by the majority of learners. Teachers should take note of the following:

Q 5.6

Poor responses from learners. Most learners referred to plug-ins as cables. It is clear from their responses that they were not exposed to this term.

Q 5.9

Poor responses from learners. They had no idea what a Firewall is. Learners do not understand basic terminology which should have been engrained from Grade 10 and 11.

(c) Provide suggestions for improvement in relation to Teaching and Learning.

Teach basic terminology and put more time and effort into theory.

(d) Describe any other specific observations relating to responses of learners and comments that are useful to teachers, subject advisors, teacher development etc.

- Learners do not read with comprehension. This might be due to a number of factors such as a language barrier or from skipping sections of the question and only focusing on specific keywords.
- Learners don't look at mark allocations.
- Learners don't know how to express themselves. Learners use too many general/vague terms and the memorandum only accepts certain words.

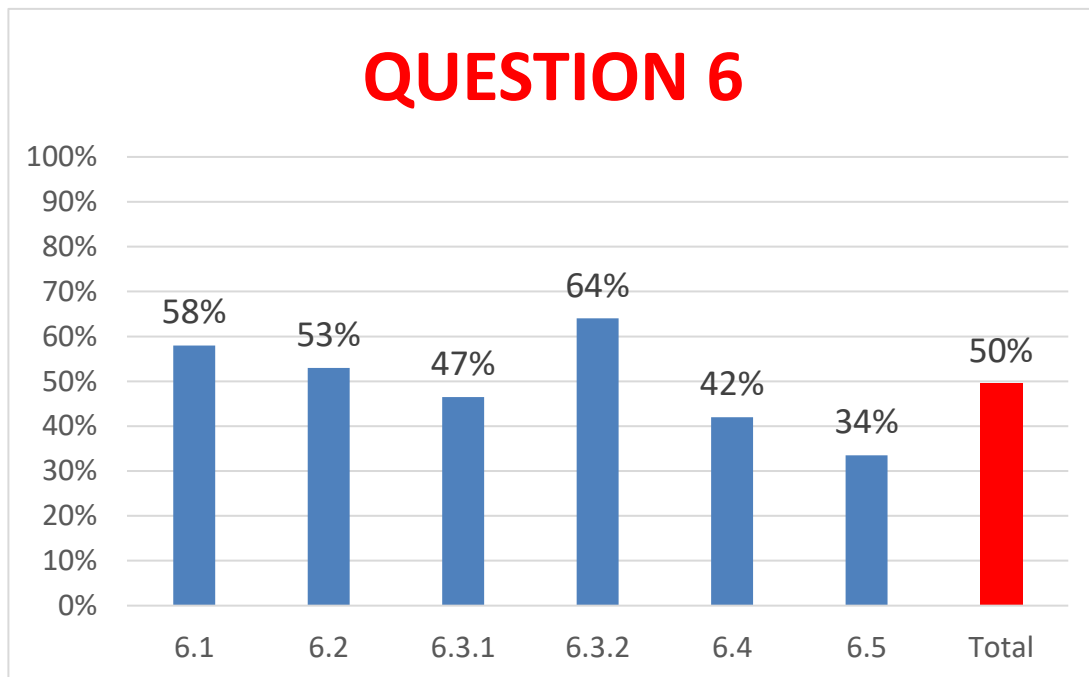
(e) Any other comments useful to teachers, subject advisors, teacher development etc.

Please refer to the general comments at the start of this section for comments, suggestions and general ideas which could help teacher development as well as advantage our learners.

QUESTION 6

(a) General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?

Average mark from the sample of 100 :		5/10
SUB-QUESTION	TOPIC OR ASPECT TESTED	AVERAGE % FROM SAMPLE
6.1 – 6.4	INFORMATION MANAGEMENT	50%



Question number	6.1	6.2	6.3.1	6.3.2	6.4	6.5	Total
Question Value	2	1	2	1	2	2	10
Maximum	2	1	2	2	2	2	10
Minimum	0	0	0	0	0	0	0
Average	58%	53%	47%	64%	42%	34%	50%
Median	1	1	1	1	1	1	5

Distribution of marks	6.1	6.2	6.3.1	6.3.2	6.4	6.5
	2	1	2	1	2	2
0	15%	47%	39%	37%	33%	48%
1	54%	53%	29%	62%	50%	37%
2	31%	0%	32%	1%	17%	15%

The performance of learners in this question was average. If a learner did poorly in this question it was probably due to:

- Lack of PAT/content knowledge.
- Learners did not understand the question.
- Practical work and application of practical to theory.

(b) Why was the question poorly answered? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.

The following questions were poorly answered by the majority of learners. Teachers should take note of the following:

Q 6.3.1

Poor response from learners. Learners did not understand what was expected from them. The question paper asked two types of answers that would return values that could be exported to a .csv file. Learners are not usually exposed to a question like this.

Q 6.5

Poorly answered, again learners battle to answer practical work in a theory paper.

(c) Provide suggestions for improvement in relation to Teaching and Learning

Teachers are referred to the list of suggestions under the same headings in Question 5. As those are the basic rules for successful teaching and learning in CAT Paper 2 – applicable to all questions

(d) Describe any other specific observations relating to responses of learners and comments that are useful to teachers, subject advisors, teacher development etc.

Please refer to observations made in the responses of learners in general in this paper. They are basically the same for all questions.

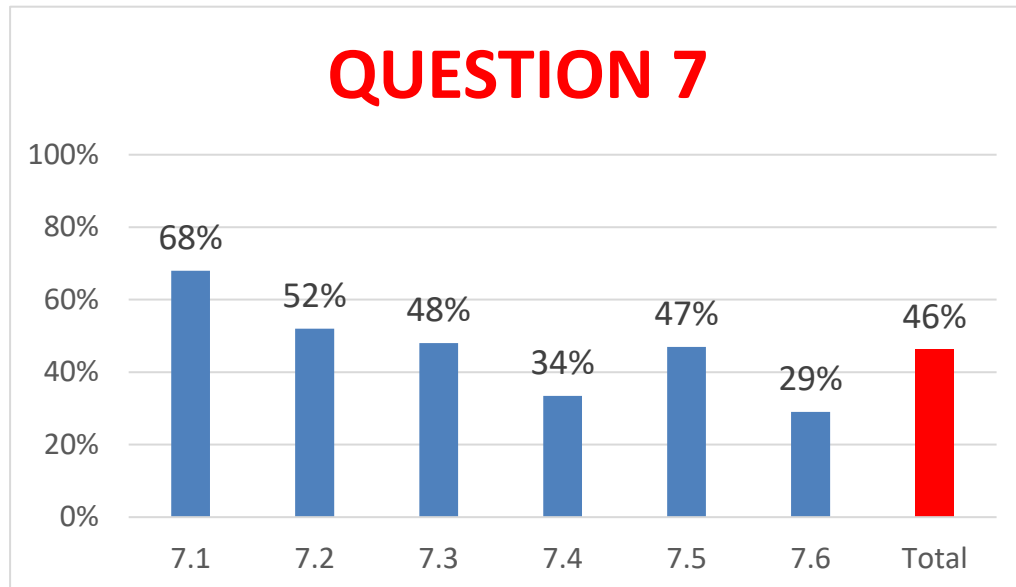
(e) Any other comments useful to teachers, subject advisors, teacher development etc.

Please refer to the general comments at the start of this section for comments, suggestions and general ideas which could help teacher development as well as advantage our learners.

QUESTION 7

(a) General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?

Average mark from the sample of 100 :		4.6/10
SUB-QUESTION	TOPIC OR ASPECT TESTED	AVERAGE % FROM SAMPLE
7.1 – 7.5	SOCIAL IMPLICATIONS	46%



Question number	7.1	7.2	7.3	7.4	7.5	7.6	Total
Question Value	1	2	2	2	1	2	10
Maximum	1	2	2	2	1	2	9
Minimum	0	0	0	0	0	0	0
Average	68%	52%	48%	34%	47%	29%	46%
Median	1	1	1	1	0	0	4

Distribution of marks	7.1	7.2	7.3	7.4	7.5	7.6
	1	2	2	2	1	2
0	32%	28%	34%	44%	53%	51%
1	68%	40%	36%	45%	47%	40%
2	0%	32%	30%	11%	0%	9%

The learners' response to this question was disappointing.

(b) Why was the question poorly answered? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.

The following questions were poorly answered by the majority of learners. Teachers should take note of the following:

Q 7.4

This question was unfair in the sense that learners are not exposed to self-driving cars. It is totally out of their framework.

Q 7.4

Poor response from learners. Learners did not understand what was expected of them. The question paper asked for disadvantages of using free cloud storage **services** and learners are only exposed to disadvantages of cloud storage in general and not cloud storage **services**.

(c) Provide suggestions for improvement in relation to Teaching and Learning.

- When questions are differently phrased or structured, learners are unable to tackle those questions.
- The learners don't read the questions properly before they answer.

(d) Describe any other specific observations relating to responses of learners and comments that are useful to teachers, subject advisors, teacher development etc.

- The understanding of some questions is still a problem.
- The learners don't read the questions properly before they answer.

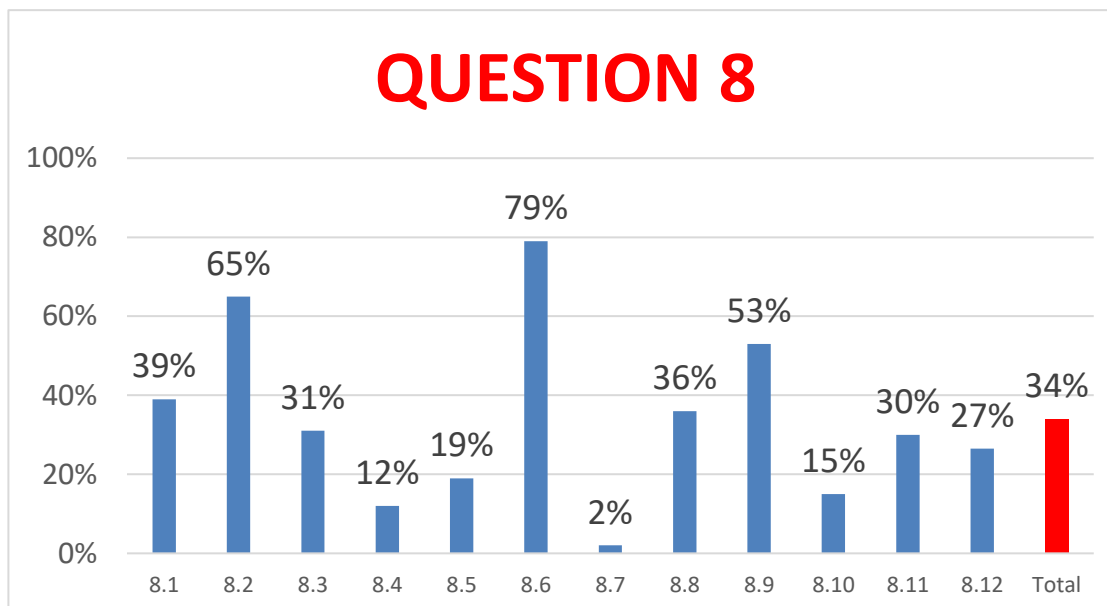
(e) Any other comments useful to teachers, subject advisors, teacher development etc.

- The way some of the question were phrased forced learners to think "out of the box"/differently.
- Teachers should take time to teach and assess learners in these types of questions.

QUESTION 8

(a) General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?

Average mark from the sample of 100 :		5.1/15
SUB-QUESTION	TOPIC OR ASPECT TESTED	AVERAGE % FROM SAMPLE
8.1 – 8.4	SOLUTION DEVELOPMENT	34%



Question number	8.1	8.2	8.3	8.4	8.5	8.6	8.7	8.8	8.9	8.10	8.11	8.12	Total
Question Value	1	1	1	1	1	1	1	1	2	2	1	2	15
Maximum	1	1	1	1	1	1	1	1	2	2	1	2	13
Minimum	0	0	0	0	0	0	0	0	0	0	0	0	0
Average	39%	65%	31%	12%	19%	79%	2%	36%	53%	15%	30%	27%	34%
Median	0	1	0	0	0	1	0	0	1	0	0	0	5

Distribution of marks	8.1	8.2	8.3	8.4	8.5	8.6	8.7	8.8	8.9	8.10	8.11	8.12
	1	1	1	1	1	1	1	1	2	2	1	2
0	61%	35%	69%	88%	81%	21%	98%	64%	29%	76%	70%	58%
1	39%	65%	31%	12%	19%	79%	2%	36%	36%	18%	30%	31%
2	0%	0%	0%	0%	0%	0%	0%	0%	35%	6%	0%	11%

The learners' response to this question was disappointing, upsetting and not up to standard. These questions were based on practical work. This is a good example of teaching theory together with practical work.

(b) Why was the question poorly answered? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.

Many learners could not respond correctly to most of the question. In general learners battled to answer practical work in a theory paper.

In cases where learners performed poorly it was mainly due to:

- They don't know what to do before you can insert an automated citation in a word processing document.
- They don't know the concept of a circular reference in a spreadsheet as well as the different Paste Special options when you paste a graph from a spreadsheet into a word processing document.
- They are not familiar with printing of cell ranges because printing is not done in CAT due to practising green computing rules.
- They don't know the meaning of a parameter value message in a database.

(c) Provide suggestions for improvement in relation to Teaching and Learning.

When teachers do practical, they need to explain the theory or how it works in theory as well.

Explain to the learners why certain functions are done and work in practical as well as the advantages of using certain features in the different programs.

(d) Describe any other specific observations relating to responses of learners and comments that are useful to teachers, subject advisors, teacher development etc.

Learners do not know how to apply practical work in theoretical context.

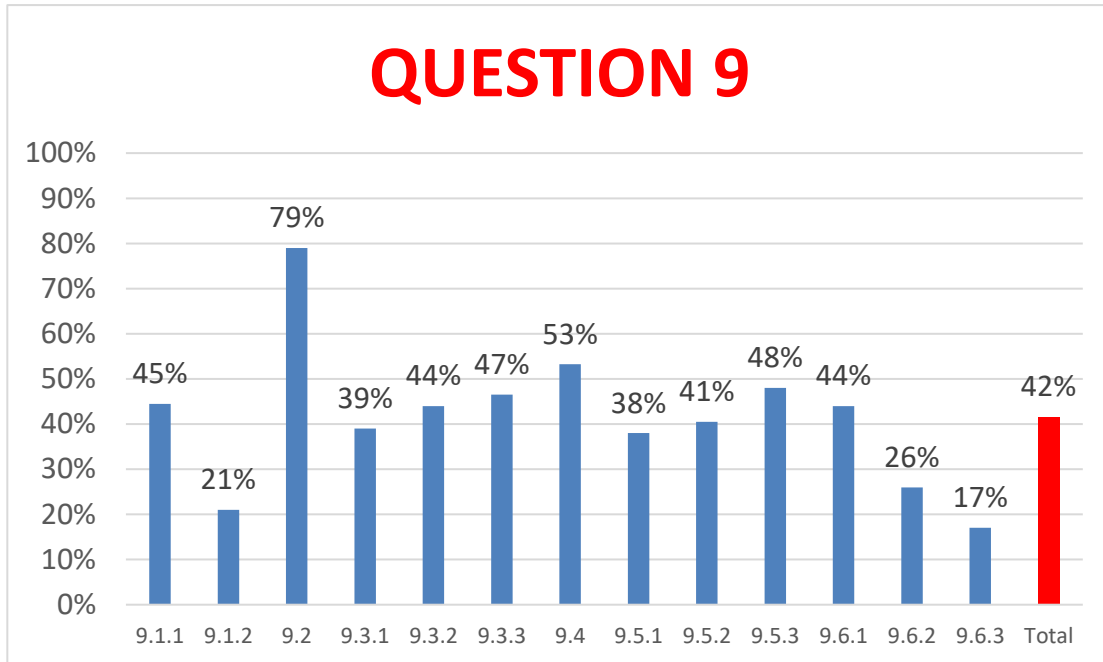
(e) Any other comments useful to teachers, subject advisors, teacher development etc.

Please refer to the general comments at the start of this section for comments, suggestions and general ideas which could help teacher development as well as advantage our learners.

QUESTION 9

(a) General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?

Average mark from the sample of 100 :		10.5/25
SUB-QUESTION	TOPIC OR ASPECT TESTED	AVERAGE % FROM SAMPLE
9.1 - 9.3	INTEGRATED SCENARIOS	42%



Question number	9.1.1	9.1.2	9.2	9.3.1	9.3.2	9.3.3	9.4	9.5.1	9.5.2	9.5.3	9.6.1	9.6.2	9.6.3	Total
Question Value	2	1	1	1	2	2	4	2	2	2	2	2	2	25
Maximum	2	1	1	1	2	2	4	2	2	2	2	2	2	22
Minimum	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Average	45%	21%	79%	39%	44%	47%	53%	38%	41%	48%	44%	26%	17%	42%
Median	1	0	1	0	1	1	2	1	1	1	1	0	0	12

Distribution of marks	9.1.1	9.1.2	9.2	9.3.1	9.3.2	9.3.3	9.4	9.5.1	9.5.2	9.5.3	9.6.1	9.6.2	9.6.3
	2	1	1	1	2	2	4	2	2	2	2	2	2
0	37%	79%	21%	61%	34%	35%	22%	50%	41%	32%	33%	53%	70%
1	37%	21%	79%	39%	44%	37%	6%	24%	37%	40%	46%	42%	26%
2	26%	0%	0%	0%	22%	28%	34%	26%	22%	28%	21%	5%	4%
3	0%	0%	0%	0%	0%	0%	13%	0%	0%	0%	0%	0%	0%
4	0%	0%	0%	0%	0%	0%	25%	0%	0%	0%	0%	0%	0%

Once again the performances of learners in this question ranged from average to very poor.

(b) Why was the question poorly answered? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.

Q 9.1.2

Learners did not respond well to this question because they are only taught the basic function of a graphics card and not the necessity to have a dedicated graphics card.

Q 9.3.1

Learners did not respond well to this question because this is Grade 10 theory. The different types of software were clearly not revised.

Q 9.6.1 – 9.6.3

Learners are not exposed to online forms as well as web-based spreadsheet programs.

(c) Provide suggestions for improvement in relation to Teaching and Learning.

Teachers are referred to the list of suggestions under the same headings in Question 5. As those are the basic rules for successful teaching and learning in CAT Paper 2 – applicable to all questions.

(d) Describe any other specific observations relating to responses of learners and comments that are useful to teachers, subject advisors, teacher development etc.

These questions were based on application as well as practical. Many learners could not respond correctly to these questions.

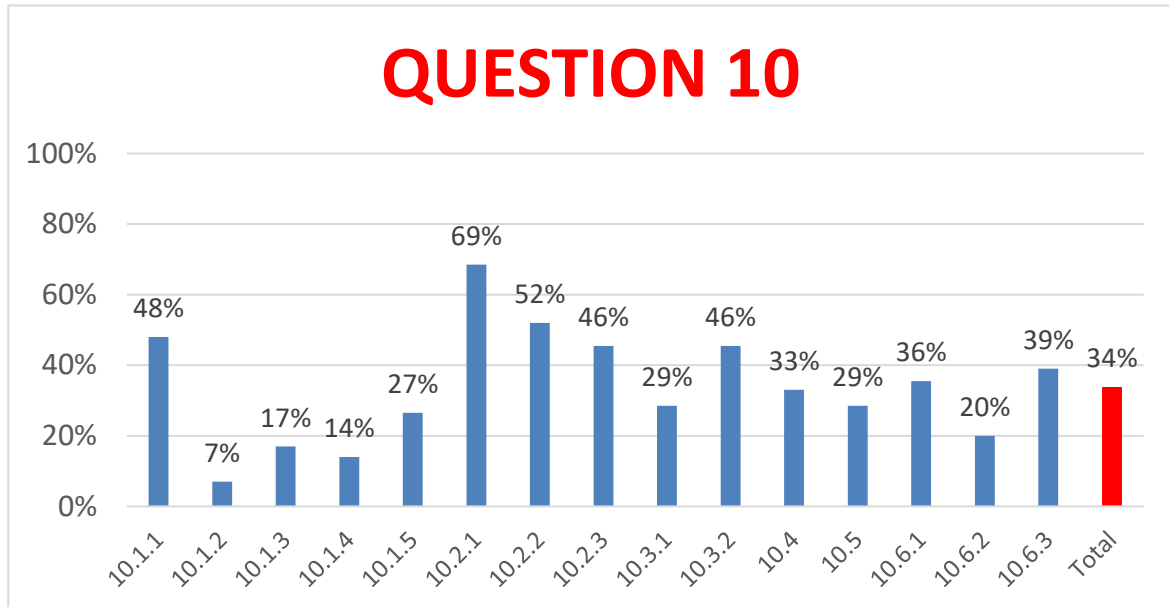
(e) Any other comments useful to teachers, subject advisors, teacher development etc.

Please refer to the general comments at the start of this section for comments, suggestions and general ideas which could help teacher development as well as advantage our learners.

QUESTION 10

(a) General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?

Average mark from the sample of 100:		8.5/25
SUB-QUESTION	TOPIC OR ASPECT TESTED	AVERAGE % FROM SAMPLE
10.1 – 10.8	INTEGRATED SCENARIOS	34%



Question number	10.1.1	10.1.2	10.1.3	10.1.4	10.1.5	10.2.1	10.2.2	10.2.3	10.3.1	10.3.2	10.4	10.5	10.6.1	10.6.2	10.6.3	Total
Question Value	2	1	1	1	2	2	2	2	2	2	2	2	2	1	1	25
Maximum	2	2	1	1	2	2	2	2	2	2	2	2	2	1	1	20
Minimum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Average	48%	7%	17%	14%	27%	69%	52%	46%	29%	46%	33%	29%	36%	20%	39%	34%
Median	1	0	0	0	0	1	1	1	0	1	1	0	1	0	0	9

Distribution of marks	10.1.1	10.1.2	10.1.3	10.1.4	10.1.5	10.2.1	10.2.2	10.2.3	10.3.1	10.3.2	10.4	10.5	10.6.1	10.6.2	10.6.3
0	14%	94%	83%	86%	55%	7%	25%	34%	59%	37%	48%	70%	39%	80%	61%
1	76%	5%	17%	14%	37%	49%	46%	41%	25%	35%	38%	3%	51%	20%	39%
2	10%	1%	0%	0%	8%	44%	29%	25%	16%	28%	14%	27%	10%	0%	0%

The learners' response to this question was disappointing, upsetting and not up to standard.

(b) Why was the question poorly answered? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.

Q 10.1.2 – 10.1.5

Learners did not respond well to these questions because it was practical work. Learners are not exposed to sending and receiving e-mails. It was disappointing that learners could not identify the URL shortener application.

Q 10.3.1 – 10.3.2

Learners did not respond well to this question because they could not identify technologies to identify and allow guests to enter the dance. These questions were also a bit out of the framework of the learners.

Q 10.5

Learners did not respond well to this question because of a lack of content knowledge. This is part of new technologies.

Q 10.6.2

Learners did not respond well to this question because it was practical work.

(c) Provide suggestions for improvement in relation to Teaching and Learning.

Teachers are referred to the list of suggestions under the same headings in Question 5. As those are the basic rules for successful teaching and learning in CAT Paper 2 – applicable to all questions.

(d) Describe any other specific observations relating to responses of learners and comments that are useful to teachers, subject advisors, teacher development etc.

These questions were based on application as well as practical. Many learners could not respond correctly to these questions.

(e) Any other comments useful to teachers, subject advisors, teacher development etc.

Please refer to the general comments at the start of this section for comments, suggestions and general ideas which could help teacher development as well as advantage our learners.



basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

SENIOR CERTIFICATE/ NATIONAL SENIOR CERTIFICATE

GRADE 12

COMPUTER APPLICATIONS TECHNOLOGY P2

NOVEMBER 2020

MARKS: 150

TIME: 3 hours

This question paper consists of 16 pages.



* C A T N E 2 *



INSTRUCTIONS AND INFORMATION

1. This question paper consists of:

SECTION A (25)
SECTION B (75)
SECTION C (50)
2. Answer ALL the questions.
3. Number the answers correctly according to the numbering system used in this question paper.
4. Start EACH question on a NEW page.
5. Do NOT write in the right-hand margin of the ANSWER BOOK.
6. Leave a line after EACH subquestion.
7. Generally, one mark is allocated per fact; therefore, a 2-mark question would require TWO facts, etc.
8. Read the questions carefully. DO NOT give more than the question requires as this will NOT be marked.
9. All answers MUST be related to Computer Applications Technology.
10. Answers such as 'cheaper', 'slower'/'faster' and 'easier' will ONLY be accepted if it is used together with a reason or an explanation.
11. Do NOT use brand names in your answers, unless specifically required.
12. Write neatly and legibly.



SECTION A**QUESTION 1: MULTIPLE-CHOICE QUESTIONS**

Various options are given as possible answers to the following questions. Choose the answer and write only the letter (A–D) next to the question numbers (1.1 to 1.10) in the ANSWER BOOK, e.g. 1.11 D.

- 1.1 A blinking vertical bar that shows the position of the text being typed in a text editor is called a ...
A highlight.
B border.
C symbol.
D cursor. (1)
- 1.2 The communication medium commonly used for an ADSL internet connection is ...
A copper cable.
B radio waves.
C fibre-optic cable.
D sound waves. (1)
- 1.3 Which ONE of the following is closely related to biometric security?
A Firewall
B Password
C Fingerprint reader
D Encryption key (1)
- 1.4 A ... is a possible reason why a program will not install.
A slow download speed
B slow start-up process
C change of regional settings
D restricted user account (1)
- 1.5 Study the following incomplete nested IF statement:
`=IF(A1=1, IF(B1=4, "Yes", "No"`

Which ONE of the following options would complete the statement to display either 'Yes' or 'No' depending on the conditions below?
- Yes – if the value in cell A1=1 **AND** the value in cell B1=4, **OR**
 - No – if either one of these conditions are not met
- A))
B), "No")
C), "No"))
D , "")) (1)

- 1.6 Which ONE of the following would you use to solve the problem when your computer randomly hangs after a driver update?
- A System Restore
 - B Disk Cleanup
 - C System Backup
 - D Task Scheduler
- (1)
- 1.7 One of the possible constraints (limitations) of big data is ...
- A a loss of revenue.
 - B a loss of user privacy.
 - C a malware infection.
 - D available bandwidth.
- (1)
- 1.8 A wireless router could be damaged if it was placed or used next to a microwave oven because of ...
- A the heat.
 - B vibration.
 - C interference.
 - D a fire hazard.
- (1)
- 1.9 A bookmark is a feature of a word processor that uses ...
- A hyperlinks.
 - B styles.
 - C tables.
 - D sections.
- (1)
- 1.10 Study the following HTML code carefully:
- ```
 First website
```
- Assume that all the code prior to the line above is correct. Which ONE of the following font colours will be used when displaying the text 'First website' in a browser?
- A Red
  - B Black
  - C Green
  - D Orange
- (1)

**[10]**



**QUESTION 2: MATCHING ITEMS**

Choose a term/concept from COLUMN B that matches a description in COLUMN A. Write only the letter (A–T) next to the question numbers (2.1 to 2.10) in the ANSWER BOOK, e.g. 2.11 U.

| COLUMN A |                                                                                                          | COLUMN B |                 |
|----------|----------------------------------------------------------------------------------------------------------|----------|-----------------|
| 2.1      | A field property that automatically inserts a value in a field for each new record in a database table   | A        | VoIP            |
|          |                                                                                                          | B        | #NULL           |
| 2.2      | Malware that is often associated with Bitcoin                                                            | C        | zombie          |
|          |                                                                                                          | D        | spyware         |
| 2.3      | A technology that is used to produce an editable soft copy from a scanned document                       | E        | botnet          |
|          |                                                                                                          | F        | survey          |
| 2.4      | A protocol that is used to enable telephone calls using the internet                                     | G        | ppm             |
|          |                                                                                                          | H        | OCR             |
| 2.5      | A spreadsheet error message that appears when the value in a cell is longer than the cell width          | I        | attribute       |
|          |                                                                                                          | J        | interview       |
| 2.6      | A cellular technology that provides high data transmission speeds                                        | K        | validation rule |
|          |                                                                                                          | L        | FTP             |
| 2.7      | A set of characters added to the end of a file name that identifies the type of file                     | M        | Edge            |
|          |                                                                                                          | N        | extension       |
| 2.8      | A unit of measurement for printing resolution                                                            | O        | HCI             |
|          |                                                                                                          | P        | default value   |
| 2.9      | A group of infected computers that can be controlled remotely to attack other computers/networks         | Q        | ransomware      |
|          |                                                                                                          | R        | LTE             |
| 2.10     | A set of questions for research purposes that will be answered electronically by a large group of people | S        | #####           |
|          |                                                                                                          | T        | DPI             |

(10 x 1)

**[10]**

**QUESTION 3: TRUE/FALSE ITEMS**

Indicate whether the following statements are TRUE or FALSE. Choose the answer and write 'true' or 'false' next to the question numbers (3.1 to 3.5) in the ANSWER BOOK. Correct the statement if it is FALSE. Change the underlined word(s) to make the statement TRUE. (Do NOT simply use the word 'NOT' to change the statement.) NO mark will be awarded if only FALSE is written.

EXAMPLES:

| QUESTION                                                                        | ANSWER            |
|---------------------------------------------------------------------------------|-------------------|
| The initial start-up instructions for a computer are stored in the <u>ROM</u> . | True              |
| <u>NFC</u> devices can connect to each other up to a distance of 10 metres.     | False – Bluetooth |

- 3.1 Grid computing is a system where resources of many computers in different locations are used at the same time to complete a single task. (1)
- 3.2 A site license allows a company to install only one copy of the software. (1)
- 3.3 An attachment is a file that can be sent together with an e-mail message. (1)
- 3.4 The AVERAGE function will give the average of a set of values in a database. (1)
- 3.5 Information overload is the process of replacing analogue technologies used for broadcasting services with digital technologies. (1)
- [5]**

**TOTAL SECTION A: 25**

**SECTION B****QUESTION 4: SYSTEMS TECHNOLOGIES**

- 4.1 Study the notebook computer (laptop) specifications in the advertisement below and answer the questions that follow.

Intel Core i5  
15.6" screen (1920 x 1080)  
128 GB SSD  
3 x USB ports  
VGA port  
Webcam with microphone  
802.11 b/g/n  
SD card reader  
6-cell battery  
Office 365 (1-year licence)

- 4.1.1 Which broad software category does Office 365 belong to? (1)
- 4.1.2 Give TWO possible reasons why screen resolution is indicated in addition to screen size in the specifications above. (2)
- 4.1.3 Give TWO reasons why newer models of notebook computers do not have optical drives. (2)
- 4.1.4 Give ONE possible reason why an SSD is specified for this computer instead of a hard drive. (1)
- 4.1.5 Give TWO features of a USB port that make it such a popular choice for connecting peripherals. (2)
- 4.1.6 Discuss why you would not expect to find a VGA port included in the specifications of this notebook computer AND state which other port you would rather expect to find. (2)
- 4.1.7 Name TWO specifications in the advertisement that would make it possible to set up biometric security on this notebook computer. (2)
- 4.1.8 Name an essential specification affecting performance that is NOT listed in this advertisement. (1)
- 4.2 State TWO benefits of using online banking as opposed to physically visiting a bank. (2)
- 4.3 Suggest ONE way in which to ensure that documents created in new software versions are compatible with older software versions. (1)

- 4.4 Give TWO reasons why you may decide to buy a desktop computer rather than a notebook computer. (2)
- 4.5 Give TWO reasons why a computer may prompt a user to start up the operating system, e.g. Windows, in safe mode. (2)
- 4.6 A printer does not print the document sent to it, even though it is working, switched on and properly connected.
- Discuss TWO ways in which to resolve this problem. (2)
- 4.7 Name the utility program that rearranges parts of files scattered all over the hard drive, so that they are stored next to each other. (1)
- 4.8 Give TWO reasons for using the Task Scheduler utility. (2)
- [25]**

**QUESTION 5: INTERNET AND NETWORK TECHNOLOGIES**

- 5.1 What is the main purpose of an ISP? (1)
- 5.2 State TWO functions of a router as used in a home network. (2)
- 5.3 State TWO advantages of a fibre connection over a wired ADSL connection. (2)
- 5.4 Why would a user prefer to have an unshaped connection instead of a shaped connection to the internet? (1)
- 5.5 State TWO advantages of using a browser-based online application for editing documents rather than a stand-alone application installed on a desktop computer. (2)
- 5.6 State TWO disadvantages of using browser plug-ins and extensions. (2)
- 5.7 Why would you get a 'Page Not Found' or 'Not Found' error message while trying to access a web page? (1)
- 5.8 Many public places often offer free internet access.
- 5.8.1 What is this type of connection called? (1)
- 5.8.2 State ONE problem with this kind of free internet connection, other than security risks. (1)
- 5.9 What is the main function of a firewall? (1)
- 5.10 How would an employee securely access his/her company network from a remote location? (1)
- [15]**

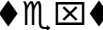
**QUESTION 6: INFORMATION MANAGEMENT**

- 6.1 Give TWO reasons why a task definition is necessary when planning the research for your practical assessment task (PAT). (2)
- 6.2 Explain how you can avoid getting many different or unrelated results from a web browser when you are searching for a particular topic on the internet. (1)
- 6.3 When setting a questionnaire, it is important to consider the expected format of the answers to closed questions as this would assist you in processing and analysing the data.
- 6.3.1 Give TWO types/formats of answers that would return values that could be exported to a .csv file. (2)
- 6.3.2 How could this data be presented visually in a spreadsheet? (1)
- 6.4 Explain why it is important that researchers do NOT include biased sources in their research or reports. (2)
- 6.5 Give TWO ways in which database queries are helpful when analysing data. (2)
- [10]**

**QUESTION 7: SOCIAL IMPLICATIONS**

- 7.1 Describe a situation that would qualify as online harassment. (1)
- 7.2 Suggest TWO ways in which computer users can prevent RSI to their hands and wrists. (2)
- 7.3 State TWO ways in which to avoid becoming a victim of e-mail phishing. (2)
- 7.4 Driverless cars/Self-driving cars may become more common in the future.  
Use your knowledge of computers to discuss TWO potential problems that could be associated with driverless cars/self-driving cars. (2)
- 7.5 State ONE disadvantage of crowd funding for a person who invests in a new business. (1)
- 7.6 State TWO disadvantages of using free cloud storage services. (2)
- [10]**

**QUESTION 8: SOLUTION DEVELOPMENT**

8.1 You typed the word 'text', but  appeared.

How do you ensure that the word 'text' is displayed instead of the symbols? (1)

8.2 Name ONE setting that can be adjusted by using the ruler of a word processor. (1)

8.3 What must you do before you can insert an automated citation in a word processing document? (1)

8.4 Data appears in cells A1:W100 in a spreadsheet.

Which spreadsheet option would you use to print only the cell range A1:D10? (1)

8.5 You wish to paste a graph from a spreadsheet into a word processing document.

Which Paste Special option would you use to enable the graph in the word processing document to update when the data in the spreadsheet changes? (1)



8.6 Why do the letters C and D not appear in the spreadsheet, as shown in the screenshot below?

|   | A | B | E | F |
|---|---|---|---|---|
| 1 |   |   |   |   |
| 2 |   |   |   |   |

(1)

8.7 Explain the concept of a *circular reference* in a spreadsheet. (1)

8.8 The LOOKUP function used in cell C5 attempts to display the mark for specific learners from the lookup table (cells E4:I5), as shown in the screenshot below, but the function returns an error message.

| C5   =VLOOKUP(B5, \$E\$4:\$I\$5, 2, FALSE) |   |             |      |   |                     |       |           |       |       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-------------|------|---|---------------------|-------|-----------|-------|-------|
|                                                                                                                                                                                                                  | A | B           | C    | D | E                   | F     | G         | H     | I     |
| 1                                                                                                                                                                                                                |   |             |      |   |                     |       |           |       |       |
| 2                                                                                                                                                                                                                |   | <b>DATA</b> |      |   | <b>LOOKUP TABLE</b> |       |           |       |       |
| 3                                                                                                                                                                                                                |   |             |      |   |                     |       |           |       |       |
| 4                                                                                                                                                                                                                |   | Name        | Mark |   | Ravi                | Harry | Millicent | Betty | Sipho |
| 5                                                                                                                                                                                                                |   | Harry       | #N/A |   | 67                  | 65    | 76        | 59    | 66    |
| 6                                                                                                                                                                                                                |   | Betty       | #N/A |   |                     |       |           |       |       |
| 7                                                                                                                                                                                                                |   | Sipho       | #N/A |   |                     |       |           |       |       |

Suggest ONE way to ensure that the correct marks appear for all listed learners. (1)

8.9 Microsoft Access allows you to insert a text box when you design a database form.

Give TWO reasons for using a text box in a database form. (2)

8.10 The following message appeared when you ran a database query:



Give TWO reasons why the database requires you to enter a parameter value. (2)

8.11 While viewing a web page in the browser, you decide that you would like to examine the HTML code.

What would you do to display the HTML code of that web page? (1)

8.12 Give TWO tips or hints that will help you to prevent errors or that will assist you with troubleshooting when coding in HTML. (2)

**[15]**

**TOTAL SECTION B: 75**



**SECTION C: INTEGRATED SCENARIO****QUESTION 9**

Your Grade 12 class is arranging a movie night as a fundraiser for your school. You need to assist with the arrangements.

- 9.1 You will require a notebook computer and a data projector to show the movies in the school hall.
- 9.1.1 Name TWO features, other than the resolution, that you will consider when buying a data projector. (2)
- 9.1.2 Explain why it will NOT be necessary for the notebook computer to have a dedicated graphics card for showing movies. (1)
- 9.2 Give ONE reason why you do NOT have to use a mouse with a notebook computer. (1)
- 9.3 Instead of downloading all the movies you want to show during the movie night, one of your friends suggested streaming the movies from services like Netflix or YouTube.
- 9.3.1 Name the type of software needed to play movies. (1)
- 9.3.2 Explain how bandwidth influences the streaming of movies. (2)
- 9.3.3 Discuss TWO limitations of using a 4G cellular connection to stream a movie. (2)
- 9.4 Identify TWO risks that your notebook computer could be exposed to by being connected to the internet AND suggest a way to prevent harm from EACH risk that you identify. (4)
- 9.5 After the movie night, the principal requires you to create a report with main and subheadings.
- 9.5.1 What steps must you take before an automatic Table of Contents can be added to a word processing document? (2)
- 9.5.2 The report will be published on a web page.
- Name TWO possible locations that hyperlinks in the report can point to. (2)
- 9.5.3 You will use the mail merge feature of the word processor to send the report to other teachers.
- State TWO advantages of using the mail merge feature to create personalised e-mail messages. (2)



9.6 To evaluate the success of the movie night, the organisers require the parents to fill in an electronic form that will be published on the school's blog.

9.6.1 Give TWO benefits for the organisers of publishing the online form on the school's blog. (2)

9.6.2 Name TWO web-based spreadsheet programs as opposed to a default spreadsheet program installed on the notebook computer. (2)

9.6.3 The data from the electronic form was exported to a spreadsheet. The organisers wish to determine how many parents gave a rating of more than 7 for all three criteria, i.e. Movie rating, Venue rating and Catering rating.

Study the screenshot below and explain why the COUNTIF function shown in the address bar of cell E2 does not give the correct answer.

| E2                  =COUNTIF(B2:D8 ">=7") |          |              |              |                 |                            |
|-------------------------------------------|----------|--------------|--------------|-----------------|----------------------------|
|                                           | A        | B            | C            | D               | E                          |
| 1                                         | ParentID | Movie rating | Venue rating | Catering rating | Number of people satisfied |
| 2                                         | G11FC601 | 8            | 5            | 10              | 12                         |
| 3                                         | G9AS409  | 10           | 10           | 5               |                            |
| 4                                         | G9GL758  | 6            | 9            | 9               |                            |
| 5                                         | G11GW985 | 2            | 3            | 7               |                            |
| 6                                         | G8KT591  | 9            | 10           | 9               |                            |
| 7                                         | G12DA376 | 8            | 1            | 2               |                            |
| 8                                         | G11DC934 | 8            | 6            | 3               |                            |

(2)  
[25]

**QUESTION 10**

Your school is organising a reunion. Learners that attended the school during the past 50 years will be invited.

- 10.1 A link to the invitation will be sent to each former learner. The responses will be captured in a database.
- 10.1.1 The GPS coordinates of the venue are included on the invitation.
- Explain the concept *GPS*. (Do NOT merely write the acronym in words.) (2)
- 10.1.2 Which e-mail feature can be used to send the link to all the former learners simultaneously? (1)
- 10.1.3 Which type of application can be used to solve the problem of a link address that is very long? (1)
- 10.1.4 Name the database object that could be used to give a printed summary of the number of men and women expected. (1)
- 10.1.5 Give TWO security measures to ensure confidentiality of the data of the guests listed in the database. (2)
- 10.2 Former learners can be located on social media and a social media page will be used to share information regarding the reunion.
- 10.2.1 Give TWO reasons why people do NOT want to have social media accounts. (2)
- 10.2.2 State TWO guidelines that could be included in a school policy on the use of social media. (2)
- 10.2.3 Discuss TWO ways in which to locate former learners using social media. (2)
- 10.3 A dinner, followed by a dance, will be held for the former learners.
- 10.3.1 Name TWO technologies that can be used to identify and allow the guests to enter the dance, other than biometric technology. (2)
- 10.3.2 The guests will be able to choose food from a menu app that is installed on a tablet.
- Give TWO reasons why managing the meal choices from a menu app is easier than managing it from a printed menu. (2)



- 10.4 The guests will use augmented reality (AR) apps for entertainment.  
State TWO ways in which augmented reality (AR) differs from virtual reality (VR). (2)
- 10.5 There will be a presentation on the use of the Internet of Things (IoT) at the school.  
Explain the concept *Internet of Things (IoT)*. (2)
- 10.6 The guests will take photographs with their smartphones.
- 10.6.1 Photographs will be transferred from the guests' smartphones to a notebook computer using Bluetooth.  
State TWO advantages of transferring the photographs wirelessly from the smartphones to a notebook computer instead of using a USB cable to transfer the photographs. (2)
- 10.6.2 All the photographs of the reunion will be included in a PowerPoint presentation.  
What can you do to reduce the file size of the PowerPoint presentation without compressing it? (1)
- 10.6.3 The PowerPoint presentation will be uploaded to the cloud.  
How can this presentation be made available to former learners who do not have access to the internet? (1)
- [25]**
- TOTAL SECTION C: 50**  
**GRAND TOTAL: 150**





# basic education

Department:  
Basic Education  
**REPUBLIC OF SOUTH AFRICA**

## SENIOR CERTIFICATE/ NATIONAL SENIOR CERTIFICATE

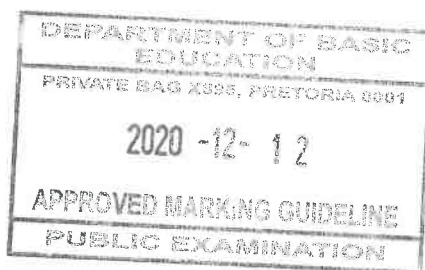
GRADE 12

COMPUTER APPLICATIONS TECHNOLOGY

NOVEMBER 2020

MARKING GUIDELINES

MARKS: 150



These marking guidelines consist of 19 pages.

Approved  
Ehlonwene  
Int. mod  
12/12/2020

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Approved  
Elmelly  
int mod  
2020.12.12

Approved  
Schlebusch  
Umalusi EM  
2020.12.12

Please turn over

## SUGGESTIONS AND RECOMMENDATIONS TO MARKERS

- Revisit the questions and the marking guideline frequently during the marking session.
- It is advisable to read the question frequently (and re-read) together with the candidate's response to check that it correlates, so that you are not misled by the candidate's statements/answers.
- Be careful not to focus on keywords or general statements, but rather read the entire answer. If in doubt, read the entire answer and then the question paper and the marking guideline.
  - Ask yourself or your senior marker if the response could 'fit' into the marking guideline before allocating the correct marks to the candidate.
  - Accept correct answers that are expressed differently, e.g. the marking guideline states 'slow' and the learner responds with 'not fast'.
- Beware of overlapping answers to a specific question. In general, ONE mark is awarded per fact.
- Do not choose answers on the candidate's behalf. Where a question requires a candidate to LIST, NAME or STATE: mark the first number of instances required, e.g. the first TWO facts if the candidate presents a list of FIVE facts and only TWO facts were required, even if presented in paragraph format.
- Questions requiring longer answers must be regarded as a single unit. Marks can be awarded if correct statements are found anywhere in the paragraph.

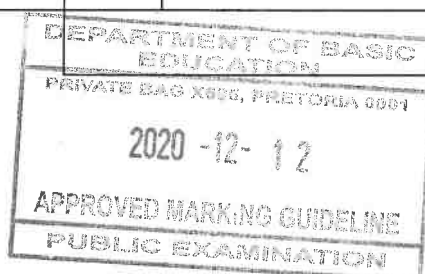
## SECTION A

### QUESTION 1: MULTIPLE-CHOICE

|                    |   |   |   |
|--------------------|---|---|---|
| 1.1                | D | ✓ | 1 |
| 1.2                | A | ✓ | 1 |
| 1.3                | C | ✓ | 1 |
| 1.4                | D | ✓ | 1 |
| 1.5                | B | ✓ | 1 |
| 1.6                | A | ✓ | 1 |
| 1.7                | B | ✓ | 1 |
| 1.8                | C | ✓ | 1 |
| 1.9                | A | ✓ | 1 |
| 1.10               | B | ✓ | 1 |
| <b>Total: [10]</b> |   |   |   |

### QUESTION 2: MATCHING ITEMS

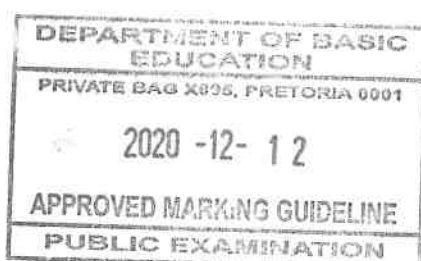
|                    |   |   |   |
|--------------------|---|---|---|
| 2.1                | P | ✓ | 1 |
| 2.2                | Q | ✓ | 1 |
| 2.3                | H | ✓ | 1 |
| 2.4                | A | ✓ | 1 |
| 2.5                | S | ✓ | 1 |
| 2.6                | R | ✓ | 1 |
| 2.7                | N | ✓ | 1 |
| 2.8                | T | ✓ | 1 |
| 2.9                | E | ✓ | 1 |
| 2.10               | F | ✓ | 1 |
| <b>Total: [10]</b> |   |   |   |



**QUESTION 3: TRUE/FALSE ITEMS**

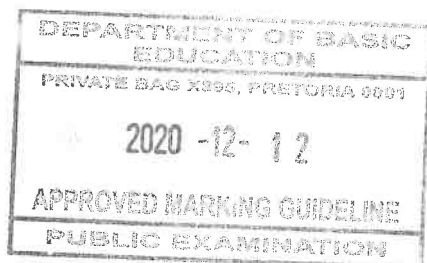
*(Note to marker: In Question 3.2, 3.4, and 3.5 candidates need to provide both the word 'False' and the correct term, e.g. motherboard, in order to get the mark.)*

|     |                                        |            |
|-----|----------------------------------------|------------|
| 3.1 | True ✓                                 | 1          |
| 3.2 | False, Single user ✓                   | 1          |
| 3.3 | True ✓                                 | 1          |
| 3.4 | False, Spreadsheet ✓/(Microsoft) Excel | 1          |
| 3.5 | False, (Digital) migration ✓           | 1          |
|     |                                        | <b>[5]</b> |

**TOTAL SECTION A: [25]**

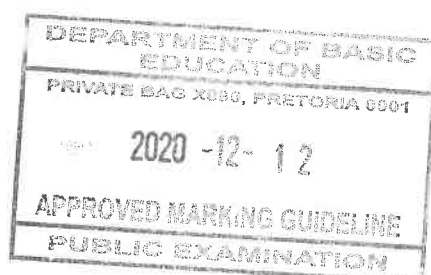
**SECTION B****QUESTION 4: SYSTEMS TECHNOLOGIES**

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |   |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| 4.1.1 | <b>Software category</b> <ul style="list-style-type: none"> <li>Application software ✓ (Accept Proprietary software)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1 |
| 4.1.2 | <b>TWO reasons for indicating screen resolution and screen size</b> <ol style="list-style-type: none"> <li>Maximum image/video quality of the screen</li> <li>Size of the screen does not necessarily indicate the clarity of the image/Large screens do not always have high resolutions</li> <li>So that the purchaser can make informed decisions</li> </ol> ✓✓ (Any two)                                                                                                                                                                                                                                                                                                                                    | 2 |
| 4.1.3 | <b>TWO reasons for not having an optical drive in a newer notebook computer</b> <ol style="list-style-type: none"> <li>Optical drive is <u>older technology</u> and used less frequently for data storage (Backup)</li> <li>Music, videos and software are available for <u>download</u> from the internet or <u>shared</u> via social media/flash drives</li> <li>Computer can be made smaller/Not enough <u>space</u> to include an optical drive</li> <li>To keep the selling <u>price</u> down – one less device</li> <li>Can reduce the <u>weight</u> of the computer/Can be made lighter</li> <li>Battery can last longer due to one less device/Reduce <u>power</u> requirements</li> </ol> ✓✓ (Any two) | 2 |
| 4.1.4 | <b>ONE reason why an SSD is specified for this computer</b> <ol style="list-style-type: none"> <li>To improve the overall performance of the computer/Faster data access</li> <li>Reduced noise levels</li> <li>Reduced power requirements</li> <li>Reduced weight improves portability</li> <li>Less prone to physical damage/More durable</li> </ol> ✓ (Any one)                                                                                                                                                                                                                                                                                                                                              | 1 |
| 4.1.5 | <b>TWO features of a USB port that make it popular</b> <ol style="list-style-type: none"> <li>Wide variety of devices can be connected via USB</li> <li>Compatible with older devices</li> <li>Power source for devices</li> <li>Enables plug and play technologies/devices</li> <li>Supports data transfer</li> <li>USB devices can be swapped while the computer is switched on/Hot swapping can be done</li> <li>Small size facilitates mobility of devices</li> </ol> ✓✓ (Any two)                                                                                                                                                                                                                          | 2 |

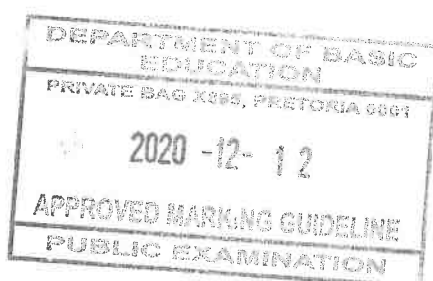




|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |   |    |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|----|
| 4.1.6 | <b>Why a VGA port is not expected for this computer</b> <ul style="list-style-type: none"> <li>Does not support high-definition display ✓/Does not support sound/Older analogue technology - not digital</li> </ul> <b>Other expected port</b> <ul style="list-style-type: none"> <li>HDMI ✓/DisplayPort</li> </ul>                                                                                                                                                                                          | 2 | 13 |
| 4.1.7 | <b>TWO specifications to set up biometric security</b> <ul style="list-style-type: none"> <li>(1) Webcam ✓</li> <li>(2) Microphone ✓</li> </ul>                                                                                                                                                                                                                                                                                                                                                              | 2 |    |
| 4.1.8 | <b>Specification affecting performance not listed in the advert</b> <ul style="list-style-type: none"> <li>RAM ✓</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                  | 1 |    |
| 4.2   | <b>TWO benefits of using online banking</b> <ul style="list-style-type: none"> <li>(1) Accessible from any location with internet/Open 24/7</li> <li>(2) Save on transport/transaction costs</li> <li>(3) No queues/Saves time</li> <li>(4) Not exposed to physical crime</li> <li>(5) Most banking activities can be done without visiting a bank</li> <li>(6) Banking can be done in the privacy of your own environment</li> <li>(7) No need for human contact/COVID-19 compliant</li> </ul> ✓✓ (Any two) | 2 |    |
| 4.3   | <b>ONE way to ensure document compatibility with older software</b> <ul style="list-style-type: none"> <li>Save in an older file format✓/Use compatibility option</li> </ul>                                                                                                                                                                                                                                                                                                                                 | 1 |    |
| 4.4   | <b>TWO reasons for buying a desktop rather than a notebook computer</b> <ul style="list-style-type: none"> <li>(1) Design allows for easier upgrading/maintenance/adding more components</li> <li>(2) Better performance for graphics processing/gaming</li> <li>(3) More difficult to steal</li> <li>(4) Can accommodate a larger screen</li> <li>(5) No need for mobility</li> <li>(6) Cheaper than a similarly configured notebook</li> </ul> ✓✓ (Any two)                                                | 2 |    |

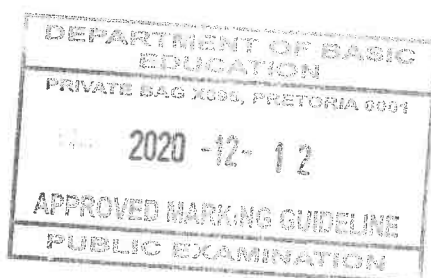


|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |             |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 4.5 | <b><i>TWO reasons for starting up an operating system in safe mode</i></b><br>(1) A new driver/hardware/software/update that was installed is faulty<br>(2) To diagnose/resolve/troubleshoot problems<br>(3) Virus infection<br>(4) After a power failure<br>✓✓ (Any two)                                                                                                                                                                                                                                                                         | 2           |
| 4.6 | <b><i>TWO ways to resolve a working printer that is not printing, but is properly connected</i></b><br>(1) Restart the printer<br>(2) Check that the correct printer was selected<br>(3) Switch from offline to online mode<br>(4) Delete jobs that may be stuck in the print queue<br>(5) Clear printer memory<br>(6) Add paper to the printer/Correct the paper size<br>(7) Fix paper jam<br>(8) Add ink/toner/Check printheads<br>(9) Check for faulty printer cable/wireless connection<br>(10) Re-install the printer driver<br>✓✓ (Any two) | 2           |
| 4.7 | <b><i>Name of utility program that rearranges fragmented parts of files</i></b><br>• Disk Defragmenter/Optimize Drive ✓ (Accept any reference to defragmenting or optimising)                                                                                                                                                                                                                                                                                                                                                                     | 1           |
| 4.8 | <b><i>TWO reasons for using the Task Scheduler utility</i></b><br>(1) Schedule/Set time for important programs to get regular updates<br>(2) Some resource intensive programs can be scheduled to run during off-peak times<br>(3) Schedule housekeeping tasks, e.g. backups, etc.<br>✓✓ (Any two)                                                                                                                                                                                                                                                | 2           |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>[25]</b> |

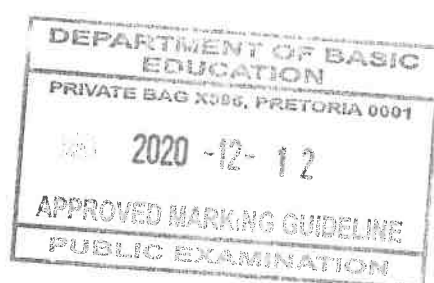


**QUESTION 5: INTERNET AND NETWORK TECHNOLOGIES**

|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |   |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---|
| 5.1 | <b>Main purpose of an ISP</b> <ul style="list-style-type: none"> <li>To provide internet access ✓ (<i>Accept Internet Service Provider</i>)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                  |  | 1 |
| 5.2 | <b>TWO functions of a router in a home network</b> <ol style="list-style-type: none"> <li>Connects a computer to the internet/Connects two networks to each other (<i>Accept reference to data</i>)</li> <li>Create a network/Has the functionality of a switch</li> <li>Offers certain services of a server for network connectivity/It acts as a server</li> <li>Provides security to the network, e.g. a firewall</li> </ol> <p style="text-align: right;">✓✓ (Any two)</p>                                                                                                          |  | 2 |
| 5.3 | <b>TWO advantages of a fibre connection over ADSL</b> <ol style="list-style-type: none"> <li>Higher speed/bandwidth</li> <li>Less attenuation/Less signal loss over a long distance/Less prone to interference</li> <li>Usually a more stable connection/Less prone to breakdown</li> <li>Lower latency/Less delay/Lower ping</li> <li>Newer technologies</li> <li>Less prone to cable theft</li> </ol> <p style="text-align: right;">✓✓ (Any two)</p>                                                                                                                                  |  | 2 |
| 5.4 | <b>Reason for an unshaped connection instead of a shaped connection</b> <ul style="list-style-type: none"> <li>Line speed is usually not affected ✓ (<i>ISP does not prioritise only certain services</i>)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                   |  | 1 |
| 5.5 | <b>TWO advantages of editing documents online instead of using stand-alone applications</b> <ol style="list-style-type: none"> <li>Changes are saved instantly/automatically/Documents are always updated</li> <li>Online software is the latest version/updated</li> <li>Documents can be accessed from any computer with internet access</li> <li>No local storage is used/Saves hard drive space</li> <li>Documents will not be lost if there is a power failure</li> <li>Many users can work on a document simultaneously</li> </ol> <p style="text-align: right;">✓✓ (Any two)</p> |  | 2 |
| 5.6 | <b>TWO disadvantages of using browser plug-ins and extensions</b> <ol style="list-style-type: none"> <li>Could introduce security vulnerabilities/malware</li> <li>Possible privacy issues</li> <li>Could reduce system performance/Slow down the computer</li> </ol> <p style="text-align: right;">✓✓ (Any two)</p>                                                                                                                                                                                                                                                                    |  | 2 |



|       |                                                                                                                                                                                                                                                                                                                  |   |             |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-------------|
| 5.7   | <b>Reason why a 'Page Not Found' or 'Not Found' error message occurs on a website</b><br>(1) The page was removed from the website/Page does not exist<br>(2) The website is undergoing maintenance/Website/server is down<br>(3) Website could have been hacked<br>(4) URL was typed incorrectly<br>✓ (Any one) |   | 1           |
| 5.8.1 | <b>Internet access that is offered in public places</b><br>• Wi-Fi ✓ /Hotspot                                                                                                                                                                                                                                    | 1 | 2           |
| 5.8.2 | <b>ONE problem with free internet access at public places (excepting security)</b><br>(1) Many people connected could slow down the line speed<br>(2) Time/Data could be limited<br>(3) Possible limitations on sites/services that are available<br>✓ (Any one)                                                 | 1 |             |
| 5.9   | <b>Main function of a firewall</b><br>• To restrict unauthorised access to a network/computer ✓                                                                                                                                                                                                                  |   | 1           |
| 5.10  | <b>How to access a company network securely from a remote location</b><br>• Use a VPN ✓ /Remote Desktop Connection/Team Viewer/AnyDesk<br>(Accept a reference to using a password to log in to their profile)                                                                                                    |   | 1           |
|       |                                                                                                                                                                                                                                                                                                                  |   | <b>[15]</b> |



**QUESTION 6: INFORMATION MANAGEMENT**

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |   |             |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-------------|
| 6.1   | <b><i>TWO reasons for a task definition in the PAT</i></b><br>(1) Explain the problem/purpose of research<br>(2) Gives guidance for the research<br>(3) What information is required<br>(4) To determine the scope of the project<br>(5) How to go about collecting the information<br>(6) How the various applications will be used in the research<br>(7) To describe the target audience to present the information to<br>✓✓ (Any two)                  |   | 2           |
| 6.2   | <b><i>ONE way to avoid getting many different or unrelated results when searching the internet</i></b><br>(1) Use specific words or phrases in the search<br>(2) Refine the search string using the (+) or (-) operators to include or exclude specific words/phrases<br>(3) Use advanced search options of the browser<br>(4) Signing into a Google account may improve the search results tailored for you<br>✓ (Any one)                                |   | 1           |
| 6.3.1 | <b><i>TWO types/formats of answers that would return values to be exported to a .csv file</i></b><br>(1) Countable results<br>(2) Numeric values<br>(3) Currencies/Financial values<br>(4) Boolean/Yes or No values/Radio buttons/Check boxes<br>(5) Multiple choice options<br>(6) Statistical values<br>(7) Single text values, e.g. names and surnames, etc.<br>✓✓ (Any two)<br>(Accept any actual examples of types or formats, e.g. age, dates, etc.) |   | 2           |
| 6.3.2 | <b><i>ONE way to present data visually in a spreadsheet</i></b><br>(1) Charts/Graphs/Spark Lines<br>(2) Conditional formatting<br>(3) Pivot tables/Tables<br>(4) Add-ins such as Power Maps (3D visualisations)<br>✓ (Any one)                                                                                                                                                                                                                             | 1 | 3           |
| 6.4   | <b><i>Why biased information should NOT be used in research</i></b><br>(1) The results would not give a balanced point of view<br>(2) It could lead to unreliable/incorrect/harmful/unwise/discriminatory decisions/conclusions<br>(3) Findings/recommendations may wrongly promote the interests of a specific group<br>✓✓ (Any two)                                                                                                                      |   | 2           |
| 6.5   | <b><i>TWO ways in which database queries are helpful in analysis</i></b><br>(1) Specific information can be extracted based on certain criteria ✓<br>(2) Calculations can be done ✓                                                                                                                                                                                                                                                                        |   | 2           |
|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |   | <b>[10]</b> |

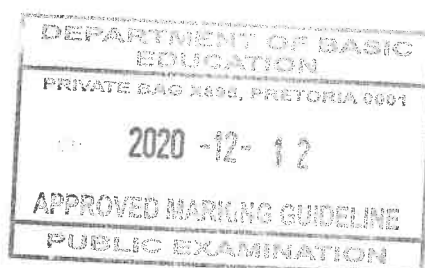
DEPARTMENT OF BASIC  
EDUCATION  
PRIVATE BAG X936, PRETORIA 0001

2020-12-12

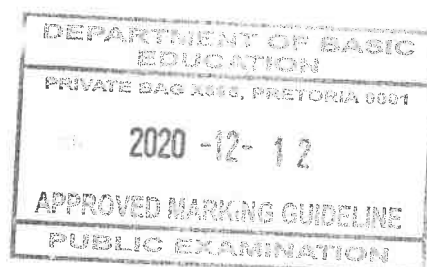
APPROVED MARKING GUIDELINE  
PUBLIC EXAMINATION

**QUESTION 7: SOCIAL IMPLICATIONS**

|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |   |
|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---|
| 7.1 | <p><b>Online harassment situation</b></p> <ol style="list-style-type: none"> <li>(1) Somebody makes rude or insulting posts about you</li> <li>(2) The posting of sensitive pictures/videos about you</li> <li>(3) Making threats against you or your loved ones</li> <li>(4) Inciting third parties to threaten or insult you</li> <li>(5) Repeated unsolicited contact/asking questions/making suggestions</li> </ol> <p>✓ (Any one)</p> <p><i>(Note to marker: Accept any reasonable response that refers to online bullying, ridiculing or intimidation.)</i></p>                                                                                                                                                                              |  | 1 |
| 7.2 | <p><b>TWO ways to prevent RSI to hands and wrists</b></p> <ol style="list-style-type: none"> <li>(1) Take regular breaks</li> <li>(2) Use 'Speech to Text' software/Use predictive text</li> <li>(3) Do appropriate exercises to relieve tension</li> <li>(4) Use ergonomically designed keyboards/devices</li> <li>(5) Wrist support equipment</li> <li>(6) Practice good typing habits/posture that does not strain your wrists</li> </ol> <p>✓✓ (Any two)</p>                                                                                                                                                                                                                                                                                   |  | 2 |
| 7.3 | <p><b>TWO ways to avoid becoming a victim of e-mail phishing</b></p> <ol style="list-style-type: none"> <li>(1) Do not respond to unknown e-mail</li> <li>(2) Do not give out your personal information via e-mail</li> <li>(3) Do not click on any links in unknown/suspicious e-mails</li> <li>(4) Use a spam filter/antivirus program</li> <li>(5) Do not do personal tasks on public computers, e.g. online banking</li> </ol> <p>✓✓ (Any two)</p>                                                                                                                                                                                                                                                                                             |  | 2 |
| 7.4 | <p><b>TWO problems associated with driverless/self-driving cars</b></p> <ol style="list-style-type: none"> <li>(1) Software bugs/corruptions could lead to the car not functioning safely</li> <li>(2) Cars can be hacked and remotely controlled</li> <li>(3) Weather conditions may impair the functioning of the sensors</li> <li>(4) No internet/GPS connection could result in inaccurate routes, poor traffic management, etc.</li> </ol> <p>✓✓ (Any two)</p> <p><i>(Notes to marker:</i></p> <ul style="list-style-type: none"> <li>• <i>Accept any valid response related to problems associated with driverless/self-driving cars.</i></li> <li>• <i>Do not accept any responses relating to mechanical problems/failure.)</i></li> </ul> |  | 2 |



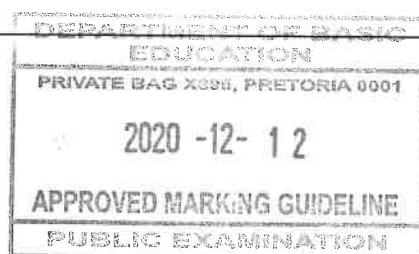
|     |                                                                                                                                                                                                                                                                                                   |             |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 7.5 | <b>ONE disadvantage of crowd funding for the investor</b><br>(1) Project that you contributed towards might never be completed<br>(2) Product/Business may not return a profit<br>(3) Investors could be scammed<br>✓ (Any one)                                                                   | 1           |
| 7.6 | <b>TWO disadvantages of <u>free</u> cloud storage services</b><br>(1) Limited storage space/Service provider could decrease the storage space<br>(2) Limited features/support/access to all services<br>(3) Less privacy/Users' personal details may be shared with third parties<br>✓✓ (Any two) | 2           |
|     |                                                                                                                                                                                                                                                                                                   | <b>[10]</b> |



*Handwritten signature/initials*

**QUESTION 8: SOLUTION DEVELOPMENT**

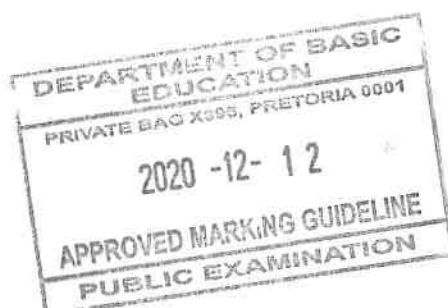
|     |                                                                                                                                                                                                                                                                                            |  |   |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---|
| 8.1 | <b><i>How to rectify characters that appear as symbols</i></b><br><br>(1) Change the font/Change symbols font to text<br>(2) Use the Format Painter to replicate the font from where it is correct<br><br>✓(Any one)                                                                       |  | 1 |
| 8.2 | <b><i>ONE setting that can be adjusted by using the ruler option</i></b><br><br>(1) Margin settings ( <i>Accept page width/height</i> )<br>(2) Tab settings/Tab stop positions<br>(3) Paragraph indentation<br>(4) Header/footer margins<br>(5) Table/cell/column width<br><br>✓ (Any one) |  | 1 |
| 8.3 | <b><i>References: 'Manage sources'/'Insert citation'</i></b><br><br>• Use the Manage Sources option to insert the reference source ✓/<br>Add a reference source via the Insert Citation option                                                                                             |  | 1 |
| 8.4 | <b><i>A spreadsheet option to print only selected cell ranges</i></b><br><br>(1) Use the Set Print Area option<br>(2) Print selection in the print settings<br>(3) Select print area in the Page Break Preview<br><br>✓ (Any one)                                                          |  | 1 |
| 8.5 | <b><i>How a pasted graph in a word processor is updated</i></b><br><br>• Use the (Paste) link ✓option when pasting the graph/It has a connection/link to the original data/Use the second option on the Paste Special dialogue                                                             |  | 1 |
| 8.6 | <b><i>Reason for spreadsheet columns not displaying</i></b><br><br>• Column C and D has been set/dragged to a narrow width<br>• Column C and D are hidden/Column width set to zero<br><br>✓ (Any one)                                                                                      |  | 1 |
| 8.7 | <b><i>Circular reference in a spreadsheet</i></b><br><br>• When a formula references/indexes the cell that it is in ✓/When a formula points to itself                                                                                                                                      |  | 1 |
| 8.8 | <b><i>ONE way to make the LOOKUP function work</i></b><br><br>(1) Change the VLOOKUP to an HLOOKUP<br>(2) Transpose the data in the Lookup table<br>(3) Use the XLOOKUP function with the correct parameters<br><br>✓ (Any one)                                                            |  | 1 |





|      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |             |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------|
| 8.9  | <p><b><i>TWO reasons to use a <u>text box</u> in a database form</i></b></p> <p>(1) To capture/edit data (<i>Accept specific examples</i>)<br/> (2) To enter a formula/To display the result of a formula<br/> (3) To display the contents of a field<br/> (4) To restrict/limit/control what can be entered</p> <p>✓✓ (Any two)</p>                                                                                                                                                                                                                                                                      |  | 2           |
| 8.10 | <p><b><i>TWO reasons for 'Enter Parameter Value' error message in a query</i></b></p> <p>(1) The Age field does not exist<br/> (2) Incorrect spelling of the field name, i.e. Age<br/> (3) Criteria in the query requires a parameter value</p> <p>✓✓ (Any two)</p>                                                                                                                                                                                                                                                                                                                                       |  | 2           |
| 8.11 | <p><b><i>How to display the HTML code of a web page</i></b></p> <p>(1) Use the View Source feature of the web browser/Ctrl+U<br/> (2) Download the web page from the internet and then open in a text editor/web development tool<br/> (3) Use the Inspect option/F12</p> <p>✓ (Any one)</p>                                                                                                                                                                                                                                                                                                              |  | 1           |
| 8.12 | <p><b><i>TWO hints to prevent errors when coding in HTML</i></b></p> <p>(1) Use the text editor (Notepad++) feature that highlights the opening and closing tags to ensure tags are closed where necessary<br/> (2) Use indentation for different segments<br/> (3) Use descriptive comments where necessary<br/> (4) Use the Auto-Completion feature of the HTML editor for tags<br/> (5) Use colour coding options for reserved words<br/> (6) Regularly run code in the browser to troubleshoot<br/> (7) Use the HTML tag sheet<br/> (8) Ask an expert or 'google' the problem</p> <p>✓✓ (Any two)</p> |  | 2           |
|      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  | <b>[15]</b> |

TOTAL SECTION B: [75]

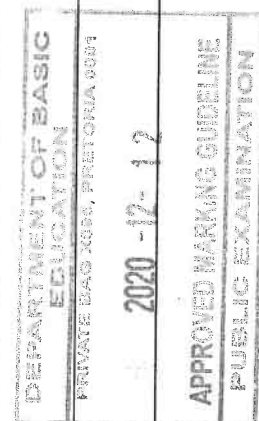


**SECTION C: INTEGRATED SCENARIO****QUESTION 9**

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |   |   |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|
| 9.1.1 | <b><i>TWO data projector features, other than resolution</i></b><br><br>(1) Lumens/Brightness<br>(2) Lamp type<br>(3) Lamp life<br>(4) Picture quality, e.g. Contrast ratio/Colour depth, etc.<br>(5) Aspect ratio<br>(6) Remote control<br>(7) Connection options/Compatibility with existing devices<br>(8) Image inversion/rotation/keystone<br>(9) Refresh rates/Response time<br>(10) Zooming options/Lens adjustment<br>(11) Short or long throw<br>(12) Portability/Physical size<br>(13) Built-in speaker/microphone, etc.<br><br>✓✓ (Any two) | 2 | 3 |
| 9.1.2 | <b><i>Reason why a dedicated graphics card is NOT required</i></b><br><br>• Showing movies is not graphics intensive ✓/Built-in graphics is sufficient for playing video                                                                                                                                                                                                                                                                                                                                                                               | 1 |   |
| 9.2   | <b><i>ONE reason for NOT using a mouse with a notebook computer</i></b><br><br>(1) Notebook already has a trackpad/touch pad/pointing stick/trackpoint ( <i>Accept descriptions</i> )<br>(2) Notebook has a touch screen<br>(3) External mouse may drain the battery faster<br><br>✓ (Any one)                                                                                                                                                                                                                                                         | 1 | 1 |



| 9.3.1                             | <b>Software used to watch movies</b> <ul style="list-style-type: none"><li>• Movie/Media/Video player ✓/Browser</li></ul> <p>(Note to marker:<br/>Accept any valid example of media players, e.g. VLC media player, iTunes, WinAmp, MediaMonkey, foobar2000, AIMP, etc.)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 1             | 5          |             |                                                                |                                 |                                                                |                                   |                                                                                           |                                 |                                                                       |   |  |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------------|-------------|----------------------------------------------------------------|---------------------------------|----------------------------------------------------------------|-----------------------------------|-------------------------------------------------------------------------------------------|---------------------------------|-----------------------------------------------------------------------|---|--|
| 9.3.2                             | <b>How bandwidth influences the streaming of movies</b> <ul style="list-style-type: none"><li>• The higher the bandwidth the more data can be transferred faster ✓</li><li>• No interruptions/buffering ✓</li></ul> <p><b>OR</b></p> <ul style="list-style-type: none"><li>• Movie will be streamed in variable quality</li><li>• Dependent on bandwidth</li></ul> <p><b>OR</b></p> <ul style="list-style-type: none"><li>• The lower the bandwidth the slower the data will be transferred,</li><li>• The movie may not stream continuously/may experience buffering</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                      | 2             |            |             |                                                                |                                 |                                                                |                                   |                                                                                           |                                 |                                                                       |   |  |
| 9.3.3                             | <b>TWO limitations of a 4G cellular connection for streaming a movie</b> <p>(1) Expensive because of high data usage ✓/Data limit (Cap) may be depleted very quickly which will increase the data cost</p> <p>(2) Weak signal strength could cause buffering of the audio/video ✓</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 2             |            |             |                                                                |                                 |                                                                |                                   |                                                                                           |                                 |                                                                       |   |  |
| 9.4                               | <b>TWO risks of the internet and preventions</b> <table border="1"><thead><tr><th>INTERNET RISK</th><th>PREVENTION</th></tr></thead><tbody><tr><td>(1) Malware</td><td>(1) Install antivirus software/Keep antivirus software updated</td></tr><tr><td>(2) Unauthorised access/Hacking</td><td>(2) Use a firewall/Activate the firewall/Use a strong password</td></tr><tr><td>(3) Cyber attacks/Vulnerabilities</td><td>(3) Verify sender/Check safety of websites/Change passwords regularly/Keep system updated</td></tr><tr><td>(4) Phishing/Social Engineering</td><td>(4) Do not give out personal details/Do not click on suspicious links</td></tr></tbody></table> <p>✓✓ (Any two internet risks)<br/>✓✓ (Any two ways of preventing attacks)</p> <p>(Notes to marker:</p> <ul style="list-style-type: none"><li>• Accept only one example of each risk.</li><li>• Preventative measure must be related to the risk</li><li>• Accept any valid prevention that is well explained)</li></ul> | INTERNET RISK | PREVENTION | (1) Malware | (1) Install antivirus software/Keep antivirus software updated | (2) Unauthorised access/Hacking | (2) Use a firewall/Activate the firewall/Use a strong password | (3) Cyber attacks/Vulnerabilities | (3) Verify sender/Check safety of websites/Change passwords regularly/Keep system updated | (4) Phishing/Social Engineering | (4) Do not give out personal details/Do not click on suspicious links | 4 |  |
| INTERNET RISK                     | PREVENTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |               |            |             |                                                                |                                 |                                                                |                                   |                                                                                           |                                 |                                                                       |   |  |
| (1) Malware                       | (1) Install antivirus software/Keep antivirus software updated                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |               |            |             |                                                                |                                 |                                                                |                                   |                                                                                           |                                 |                                                                       |   |  |
| (2) Unauthorised access/Hacking   | (2) Use a firewall/Activate the firewall/Use a strong password                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |               |            |             |                                                                |                                 |                                                                |                                   |                                                                                           |                                 |                                                                       |   |  |
| (3) Cyber attacks/Vulnerabilities | (3) Verify sender/Check safety of websites/Change passwords regularly/Keep system updated                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |               |            |             |                                                                |                                 |                                                                |                                   |                                                                                           |                                 |                                                                       |   |  |
| (4) Phishing/Social Engineering   | (4) Do not give out personal details/Do not click on suspicious links                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |               |            |             |                                                                |                                 |                                                                |                                   |                                                                                           |                                 |                                                                       |   |  |



|       |                                                                                                                                                                                                                                                                                                                                                                                                                       |   |             |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-------------|
| 9.5.1 | <b>Steps to take before creating a Table of Contents</b><br>• Apply appropriate styles ✓ to (different levels of) headings ✓                                                                                                                                                                                                                                                                                          | 2 | 6           |
| 9.5.2 | <b>TWO locations that a hyperlink can point to</b><br>(1) Hyperlink can point to another place on the same page✓/bookmark<br>(2) Hyperlink can point to another page/website/e-mail address/local document✓ (Accept any two locations inside/outside the report)                                                                                                                                                      | 2 |             |
| 9.5.3 | <b>TWO advantages of mail merge</b><br>(1) Reports can be automatically customised for many individuals<br>(2) You do not have to retype the report to every recipient/Saves time<br>(3) Edit recipient list<br>(4) No need to type in the addresses of individuals as it will be automatically extracted from a spreadsheet/database<br>(5) Format/Design of the merged document can be done at once<br>✓✓ (Any two) | 2 |             |
| 9.6.1 | <b>TWO benefits of publishing an online form on the school's blog</b><br>(1) Efficient way to reach a target audience<br>(2) No link needs to be sent<br>(3) Feedback can be received quickly/within a short time frame<br>(4) Feedback can be summarised electronically<br>(5) Supports green computing, e.g. saves paper/ink<br>✓✓ (Any two)                                                                        | 2 | 6           |
| 9.6.2 | <b>TWO web-based spreadsheet programs</b><br>(1) (Google) Sheets<br>(2) (Microsoft) Excel in Office 365<br>(3) Numbers, etc. (Accept any other valid web-based spreadsheet program)<br>✓✓ (Any two)                                                                                                                                                                                                                   | 2 |             |
| 9.6.3 | <b>TWO reasons why the COUNTIF function is incorrect</b><br>(1) Missing separator/comma/semi-colon/delimiter<br>(2) COUNTIF cannot check if all three ratings in each row are greater than 7/Incorrect function/COUNTIFS not used<br>(3) The condition should be greater than 7 only<br>(4) Range/s should be a single row at a time<br>✓✓ (Any two)                                                                  | 2 |             |
|       |                                                                                                                                                                                                                                                                                                                                                                                                                       |   | <b>[25]</b> |

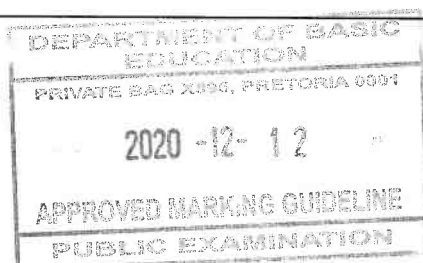


**QUESTION 10**

|        |                                                                                                                                                                                                                                                                                                                                                  |   |   |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|
| 10.1.1 | <b>The concept of GPS</b> <ul style="list-style-type: none"> <li>GPS is a system that receives information from satellites ✓ to calculate/triangulate an exact geographical location ✓/provide directions</li> </ul>                                                                                                                             | 2 | 7 |
| 10.1.2 | <b>E-mail feature to send numerous invitations simultaneously</b> <ul style="list-style-type: none"> <li>Distribution/Address/Mailing list ✓/Contact/Hangouts/Google/Yahoo group</li> </ul>                                                                                                                                                      | 1 |   |
| 10.1.3 | <b>Type of application to shorten a link address</b> <ul style="list-style-type: none"> <li>URL shortener ✓</li> </ul>                                                                                                                                                                                                                           | 1 |   |
| 10.1.4 | <b>Database object to print a summary</b> <ul style="list-style-type: none"> <li>Report ✓ (Accept Pivot/Totals query)</li> </ul>                                                                                                                                                                                                                 | 1 |   |
| 10.1.5 | <b>TWO methods to ensure confidentiality of the guests in the database</b> <ol style="list-style-type: none"> <li>Use encryption/password on the file/computer</li> <li>Use a firewall on the computer</li> <li>Keep the computer offline</li> <li>Prevent access to the computer room</li> </ol> <p style="text-align: right;">✓✓ (Any two)</p> | 2 |   |



|        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|
| 10.2.1 | <p><b>TWO reasons for NOT having social media accounts</b></p> <ol style="list-style-type: none"> <li>(1) Social media can be a distraction/can waste time</li> <li>(2) People may become addicted to social media</li> <li>(3) People may be afraid of the risks, e.g. being hacked</li> <li>(4) People may feel vulnerable because of cyberbullying/cyberstalking/Not being sure of identity of others that are online</li> <li>(5) People may not be familiar/do not know how to use social media</li> <li>(6) Social media may promote inappropriate relationships</li> <li>(7) May cause emotional distress</li> <li>(8) People want to maintain their privacy</li> <li>(9) Employers/Family/Friends may view certain past pictures or messages negatively</li> </ol> <p style="text-align: right;">✓✓ (Any two)</p> | 2 | 6 |
| 10.2.2 | <p><b>TWO guidelines in a school's social media policy</b></p> <ol style="list-style-type: none"> <li>(1) Post only appropriate school-related information/Do not post unauthorised school related information</li> <li>(2) Do not post information that would bring the school into disrepute/Do not post rude comments on social media</li> <li>(3) Do not post private information that could harm/hurt others</li> <li>(4) Do not use SMS or incorrect language (slang)</li> <li>(5) Obtain permission before posting/tagging pictures of people</li> <li>(6) No social media during school hours/No cyberslacking</li> <li>(7) Punishment/Repercussions if guidelines are ignored</li> </ol> <p style="text-align: right;">✓✓ (Any two)</p>                                                                          | 2 |   |
| 10.2.3 | <p><b>TWO ways to locate people on social media</b></p> <ol style="list-style-type: none"> <li>(1) Use a search engine to search for names of people</li> <li>(2) Search/Check for their user profiles on social media</li> <li>(3) Contact friends of people you are searching for/Post on social media for anyone who may know the people</li> <li>(4) Check for tags/likes/location information on photos/postings</li> </ol> <p style="text-align: right;">✓✓ (Any two)</p>                                                                                                                                                                                                                                                                                                                                           | 2 |   |
| 10.3.1 | <p><b>TWO technologies (not biometric) used to identify people</b></p> <ol style="list-style-type: none"> <li>(1) QR/Bar codes</li> <li>(2) RFID tags</li> <li>(3) Enter PIN on keypad</li> <li>(4) NFC on smartphones</li> </ol> <p style="text-align: right;">✓✓ (Any two)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 2 |   |
| 10.3.2 | <p><b>TWO reasons why a tablet is more suitable to manage meal choices</b></p> <ol style="list-style-type: none"> <li>(1) Orders and feedback are sent immediately to/from a central system</li> <li>(2) Fewer wrong orders/Fewer errors/No illegible handwriting</li> <li>(3) Tablet view can be adjusted for people with low vision</li> <li>(4) When food items are no longer available, they can automatically be removed from the electronic menu/No reprinting needed</li> </ol> <p style="text-align: right;">✓✓ (Any two)</p>                                                                                                                                                                                                                                                                                     | 2 |   |



| 10.4                                                                                                   | <p><b><i>TWO differences between augmented reality and virtual reality</i></b></p> <table border="1"><thead><tr><th>Augmented reality (AR)</th><th>Virtual reality (VR)</th></tr></thead><tbody><tr><td>(1) AR is the real world in real time ✓</td><td>VR is a simulated world</td></tr><tr><td>(2) Layers added to real world✓/<br/>Enhanced reality using<br/>technology/Does not require head<br/>gear</td><td>Extra layers not required/Tech-<br/>nology used to create<br/>simulation/Requires head gear</td></tr></tbody></table> <p><b>(Note:</b><br/><i>Marks cannot be allocated for two answers in the same row)</i></p> | Augmented reality (AR) | Virtual reality (VR) | (1) AR is the real world in real time ✓ | VR is a simulated world | (2) Layers added to real world✓/<br>Enhanced reality using<br>technology/Does not require head<br>gear | Extra layers not required/Tech-<br>nology used to create<br>simulation/Requires head gear |  | 2 |
|--------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|----------------------|-----------------------------------------|-------------------------|--------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|--|---|
| Augmented reality (AR)                                                                                 | Virtual reality (VR)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                        |                      |                                         |                         |                                                                                                        |                                                                                           |  |   |
| (1) AR is the real world in real time ✓                                                                | VR is a simulated world                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                        |                      |                                         |                         |                                                                                                        |                                                                                           |  |   |
| (2) Layers added to real world✓/<br>Enhanced reality using<br>technology/Does not require head<br>gear | Extra layers not required/Tech-<br>nology used to create<br>simulation/Requires head gear                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                        |                      |                                         |                         |                                                                                                        |                                                                                           |  |   |
| 10.5                                                                                                   | <p><b><i>Internet of Things (IoT)</i></b></p> <ul style="list-style-type: none"><li>• All sorts of appliances/devices/objects ✓ connected to one another via the internet ✓</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                               |                        | 2                    |                                         |                         |                                                                                                        |                                                                                           |  |   |
| 10.6.1                                                                                                 | <p><b><i>TWO advantages of transferring data to a computer via bluetooth</i></b></p> <p>(1) No clutter of cables/Easier to manage<br/>(2) You do not have to be very close to the computer<br/>(3) Less time consuming as multiple guests will be able to transfer data at the same time</p> <p>✓✓ (Any two)</p>                                                                                                                                                                                                                                                                                                                    | 2                      | 4                    |                                         |                         |                                                                                                        |                                                                                           |  |   |
| 10.6.2                                                                                                 | <p><b><i>ONE way to reduce the size of the PowerPoint presentation</i></b></p> <p>(1) Reduce resolution of the photographs<br/>(2) Crop/Snip the pictures<br/>(3) Change the picture format/Compress picture</p> <p>✓ (Any one)</p>                                                                                                                                                                                                                                                                                                                                                                                                 | 1                      |                      |                                         |                         |                                                                                                        |                                                                                           |  |   |
| 10.6.3                                                                                                 | <p><b><i>Alternative to cloud storage (No internet access)</i></b></p> <ul style="list-style-type: none"><li>• Flash drive ✓/CD or DVD/External hard drive/SD Card/Handout</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1                      |                      |                                         |                         |                                                                                                        |                                                                                           |  |   |
|                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                        | [25]                 |                                         |                         |                                                                                                        |                                                                                           |  |   |

TOTAL SECTION C: [50]

GRAND TOTAL: [150]

