St Edward's College Malta

Mid-Year Examinations February 2020

Year 12 **Computing SL** **Time: 2 hours**

Name and Surname	

Instructions to Students:

1. Do not open this examination paper until instructed to do so.
2. Write your name and surname on this page.
3. Read all instructions and questions carefully.
4. Answer ALL questions in the spaces provided.
5. Diagrams must be drawn in pencil.
6. Leave the last 10 minutes for revision of paper.

For teacher's use only **Mr E. Attard Cassar**

Question	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**Total**
Obtained									
Allotted	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**80**

1. Two of the stages of the system development life cycle is the **feasibility study** and **implementation**.

   a. What do we mean by **legal feasibility** and **schedule feasibility**? [2]

   b. One **changeover method** is the **parallel changeover**. Mention and describe one other method. [2]

   c. What is **data migration**? Describe one potential problem with data migration. [2]

   d. One type of software testing is **dry-run testing**. What is it? Mention and describe another type of testing. [3]

   e. What does **SaaS** stand for? [1]

2.

a. Why is it important to have good **code documentation**? Give two reasons. [2]

b. Name two features that good code documentation must have. [2]

c. **User documentation** can have several forms. Mention two. [2]

d. Mention two potential causes for **data loss**. Give solutions to combat the causes you mentioned. [4]

3.

a. Name one advantage and one disadvantage when comparing **unstructured interviews** and **questionnaires**. [2]

b. Describe what a **DFD** is. [2]

c. What is a **structure chart**? [2]

d. What is **prototyping**? [2]

e. There are **social** and **ethical issues** associated with the introduction of a new IT system. Explain. [2]

4.

a. Describe the role of the following **CPU** parts.

i. CU [2]

ii. ALU [2]

iii. MAR [2]

iv. MDR [2]

b. What role does **L1** have? [2]

5.

a. List two examples of **secondary storage**. [1]

b. What is **Virtual Memory**? [3]

c. List and describe two functions of an **operating system**? [4]

d. Describe the role of a **DBMS**. [2]

6.

a. What are **signed** and **unsigned** numbers? [1]

b. Express 12.75_{10} in binary. [1]

c. Express -2.5_{10} in **two's complement** in **one byte** where the point is between the fourth and fifth bit. [2]

d. State **De Morgan**'s rules. [2]

e. Show that (A + B*C)' + A'*B + A*C' = A' + C'. [4]

7.

a. What is the difference between an **algorithm** and a **program**? [2]

b. What **two** techniques do we normally use to express an algorithm. [2]

c. Give an example of a **conditional statement**. [1]

d. Define the following terms:

i. **Gantt chart** [1]

ii. **Exception** [1]

iii. **Concurrency** [1]

iv. **Abstraction** [1]

v. **Modularisation** [1]

8.

a. Write the **pseudocode** of method that given as parameters X1, X2 and X3 it will choose the **smallest** number. [3]

b. Write the pseudocode of the **sequential search**. [3]

c. Write the pseudocode of the **bubble sort**. [4]