

Grade 12 – Holiday Assessment

Information & Communication Technology

Answer all the questions

01.

- (a) Describe the term value of information with suitable graph.
- (b) Describe the function of cache memory.
- (c) Briefly describe “System Software” and “System Utility” with suitable examples.
- (d) Describe how ICT is applied to improve the agriculture sector in Sri Lanka.

02.

- (a) Prove the Boolean identity $(A+B) \cdot (A+C) = A + B.C$ using truth table.
- (b) Apply De Morgan’s Theorem to the following expression to simplify into sum of products (SOP) form.

$$\overline{(A.B.C)} \cdot D$$

- (c) Consider the Truth Table given below to write the answers for the following questions:

A	B	C	F
1	1	1	1
1	1	0	1
1	0	1	1
1	0	0	0
0	1	1	1
0	1	0	1
0	0	1	1
0	0	0	0

- (i) Find the Boolean expression for the output F.
- (ii) Simplify the expression obtained in above using theorems in Boolean algebra and design the circuit for simplified expression.

03.

- (a) Briefly describe following type of operating system with suitable example.
 - i) Single task OS
 - ii) Multi user OS
- (b) List four functions of an operating system.
- (c) What you meant by the term process?
- (d) Draw the seven state process transition diagram and label the components.