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# ST BENEDICT'S COLLEGE



**SUBJECT**

**Information Technology  
Theory Memo**

**DATE**

November 2013

**GRADE**

11

**MARKS**

120

**EXAMINER**

Mrs Kench

**MODERATOR**

Mr Gill

**NAME**

**DURATION**

2 Hours

**CLASS**

## COGNITIVE LEVELS

**LOW ORDER**

33 %

**MIDDLE  
ORDER**

37 %

**HIGH ORDER**

30 %

**INSTRUCTIONS**

**COMMENT**

**TEACHER'S  
SIGNATURE**

**PARENT'S**

**SIGNATURE**

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|  |
|  |

**QUESTION 1****TERMINOLOGY****10 MARKS**

- 1.1 C (1)
- 1.2 B (1)
- 1.3 B (1)
- 1.4 B (1)
- 1.5 C (1)
- 1.6 C (1)
- 1.7 A (1)
- 1.8 D (1)
- 1.9 B (1)
- 1.10 D (1)

**QUESTION 2****30 MARKS**

- 2.1.1 Communication between components✓ on the motherboard✓ (2)
- 2.1.2
  - (a) USB Southbridge✓ (1)
  - (b) PCI Express North or Southbridge✓ (1)
  - (c) Network card Southbridge✓ (1)
- 2.2
  - 2.2.1 Store next instructions and data✓ to be accessed to speed up slower RAM.✓ (2)
  - 2.2.2
    - (a) Increase the clock multiplication factor✓ (1)
    - (b) Both inc components speed. Once increases mult factor, the other inc system clock✓ (2)
  - 2.2.3 Hyperthreading – more than one set of registers✓ on CPU to allow for fast switching✓  
 Multiprocessing – more than✓ one processor✓ Multiprocessor ✓ is better as two task can run concurrently with no switching. ✓ (6)
- 2.3
  - (a) Check the speed of the RAM✓ (1)
  - (b)
    - (i) Fast access area on disk ✓ as an extension to RAM.✓ (2)
    - (ii) Hard drive is slower✓ (1)
  - (c) Cache is on CPU✓. Different types of memory✓ Different components✓ Any two (2)
- 2.4 A higher performance CPU. / More RAM. / Higher performance hard drives/SCSI/higher RPM drives. / Server software/more robust operating systems Any two (2)
- 2.5

- 2.5.1 Interrupt ✓ (1)
- 2.5.2 OS detects device and queries it ✓  
 OS check IVTable to see if device was prev installed – if so device can be used immediately ✓  
 If not allocate IRQ number and IO range add device to IVT ✓  
 Locate driver ✓ (4)

**QUESTION 3****COMMUNICATION TECHNOLOGY****20 MARKS**

- 3.1 Fibre optic ✓ cable will be exposed ✓ and can be a backbone. ✓ Accept copper if correctly justified. (3)
- 3.2 Ethernet ✓ hybrid ✓ CSMA/CD ✓ (3)
- 3.3
- 3.3.1 Switch (1)
- 3.3.2 Router (1)
- 3.3.3 Bridge (1)
- 3.4
- 3.4.1 Wireless Mesh network ✓ nodes use common wifi standards ✓ only one node needs to be wired to the network ✓ (3)
- 3.4.1 Range ✓ will be too short ✓ (2)
- 3.5 Edge 3G WiMax Any two (2)
- 3.6 Any two correct rows

|                     |                 |
|---------------------|-----------------|
| TCP                 | UDP             |
| Connection oriented | Connectionless  |
| Error correction    | Error detection |
| Data in a stream    | Data in packets |

(4)

**QUESTION 4****INTERNET****11 MARKS**

Mr Eagle wants to create an interactive web site where visitors can view the animals online during the day.

- 4.1 Web 2.0 ✓ – it is dynamic, users can make changes e.g. post comments, RSS feeds, users can subscribe Any two reasons ✓ ✓ (3)
- 4.2 Adobe Flash ✓, .Real Player ✓ or any correct two (2)
- 4.3

- 4.3.1 Voice/sound comm✓ using IP protocol✓ OR sending video and sound using the Internet (2)
- 4.4
- 4.4.1 JPeg✓ (1)
- 4.4.2 Mpeg-4✓ (1)
- 4.5
- 4.5.1 Cookies is a text file✓ stored in the browser of user's preferences✓ (2)

**QUESTION 5** **SOCIAL IMPLICATIONS** **13 MARKS**

- 5.1
- 5.1.1 No✓ they are endangered✓ and could alert poachers.✓ (3)
- 5.2
- 5.2.1 Firewall, encryption, passwords✓✓ ANY TWO (2)
- 5.3
- 5.3.1 Yes ✓it is in the public domain✓ (2)
- 5.4
- 5.4.1 Identity theft of staff,✓✓ keylogging to record keystrokes of the financial administrator to obtain banking details✓✓, scams to buy and sell animals illegally ANY TWO (4)
- 5.5
- 5.5.1 Budget for equipment, assemble new systems, maintain sw and hw register new users ANY TWO (2)

**QUESTION 6** **SECURITY AND DATA MANAGMENT** **12 MARKS**

- 6.1
- 6.1.1 GUI✓ with numbers for that the user can click on.✓ (2)
- 6.1.2 Range check✓ Presence check✓ data type check✓ (3)
- 6.2
- 6.2.1 Software✓ to create an d control a database✓ (2)
- 6.2.2 Backup, connectivity, storage and update facilities security, data dictionary ANY TWO (2)
- 6.2.3 Centralised,✓ The data is not copied✓ to other servers. ✓ (3)

**QUESTION 7** **SOLUTION DEVELOPMENT** **24 MARKS**

- 7.1
- Downloaded from eduresourceza.com

- (a) Impact: (accept ONE correct impact)
- Nothing/The execution of the program won't be affected/The program will produce negative output.
  - No run-time error will occur.
  - The flow of the program will continue and the user will be asked to enter the next day's number of enclosures cleaned.. (2)

(b) Run time✓ (1)

#### 7.1.2

(a) The program compiles and runs✓ but has unexpected results.✓ (2)

(b) Accept ONE correction for each logical error

Correction for error Line 4: ✓

Move line 4 to any position above the starting point of the loop✓.

OR

Move line 4 between lines 1/2 or 2/3.

Correction for error Line 7: ✓

Change line 7 to: Pay ✓ Pay + (Number \* 100) ?

OR

Change line 7 to: Pay Total \* 100

Move line 7 to outside the loop, between lines 8 and 9. (4)

#### 7.2.1

(a) Assign values to the fields of an object✓ (1)

(b) Match the method signature✓ (1)

(c) Overloading✓ (1)

#### 7.2.2

(a) Get / accessor✓ (1)

(b) + getHospitalisation()✓ : boolean✓ (2)

#### 7.2.3

(a) No ✓ SQL ✓ has a search facility using SELECT✓ (3)

(b) No ✓ SQL has better security✓ and the database can be easily extended.  
✓ Accept YES✓ if small file ✓ do not need DBMS✓ (3)

(c) 23#Rover#Sick#100mg Valium#True✓✓✓ (3)