PENANG CHINESE GIRLS' HIGH SCHOOL
Trial Examination 2011
Form 5
Information and Communication Technology

Time: 2 ½ hours

INSTRUCTIONS

1. This question paper consists of three sections: Section A, Section B and Section C.
2. Answer all questions in Section A and Section B.
3. Answer Question 31 and either Question 32 or Question 33 in Section C.
4. Write your answers for Section A in the spaces provided in **Answer Sheet**.

SECTION A [36 marks]

1. FIGURE 1 shows two generations of computers.

(a)   (b)

FIGURE 1

| Vacuum tube | Transistor | Integrated Circuit | Microprocessor |

Choose the technology used for each generation of computer.

2. Which of the following are related to ethics?

   I. A set of rules to control computer users.
   II. Computer users may ignore the guidelines provided.
   III. Can be applied anywhere.
   IV. Punishment is imposed on persons who do not follow the rules.

   A. I, II   C. II, III
   B. I, III   D. III, IV

3. List ONE way to protect your data privacy in ICT.

4. TABLE 1 describes various cases of computer crimes.

P	A former accounts clerk used her computer to access her company's accounting software without authorization, and in turn issued various checks payable to herself and others.
Q	A student had set up a web site with the purpose of allowing someone else's music, videos, or software to be distributed and downloaded without the owner's permission.
R	A student clicked on a hyperlink which was embedded with harmful script, a page was sent back to the student and the script was executed unexpectedly on his computer.

TABLE 1

Choose the statement that describes

(a) Choose the statement that describes malicious code attack.

(b) Name the computer crime described in Statement Q.

5. FIGURE 2 shows a security measure to protect the computers on a network.
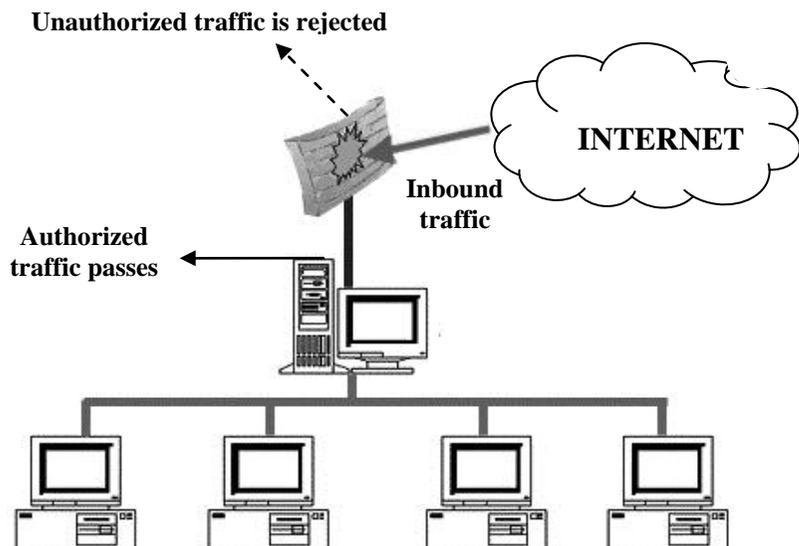
FIGURE 2

Name the security measure shown in FIGURE 2.

6. State TRUE / FALSE to the following statements.

(a) Gigabyte (GB) is one of the units used to measure the clock speed of a processor.

(b) Hard disk and floppy disk are the examples of magnetic storage devices.

7. FIGURE 3 shows a block diagram that represents the parts of a computer system.
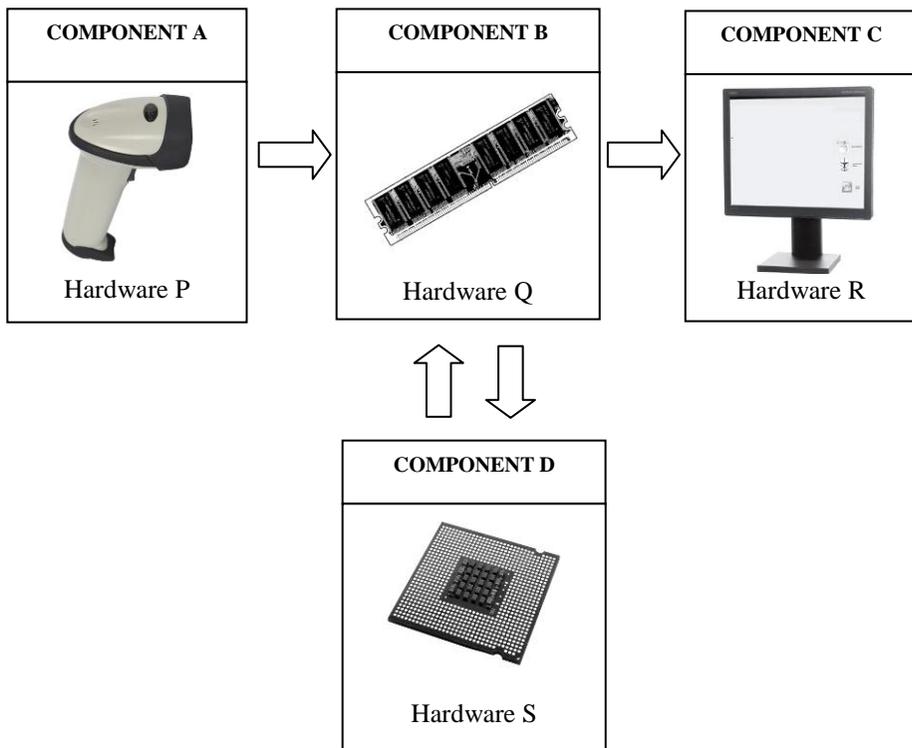
COMPONENT A	COMPONENT B	COMPONENT C
Hardware P	Hardware Q	Hardware R

COMPONENT D
Hardware S

FIGURE 3

Which hardware is not matched with its component correctly?

8.
- A temporary storage where the operating system, application programs, and data in current use are kept.   - provides direct access to any single location.

State the storage described in the text above.

9. An arrangement of two or more computers that are linked electronically so that they can communicate, share processing power and storage facilities.

The statement above defines _____.

10. A privately maintained computer network that can be accessed only by authorized persons, especially members or employees of the organization that owns it.

State the network communication technology.

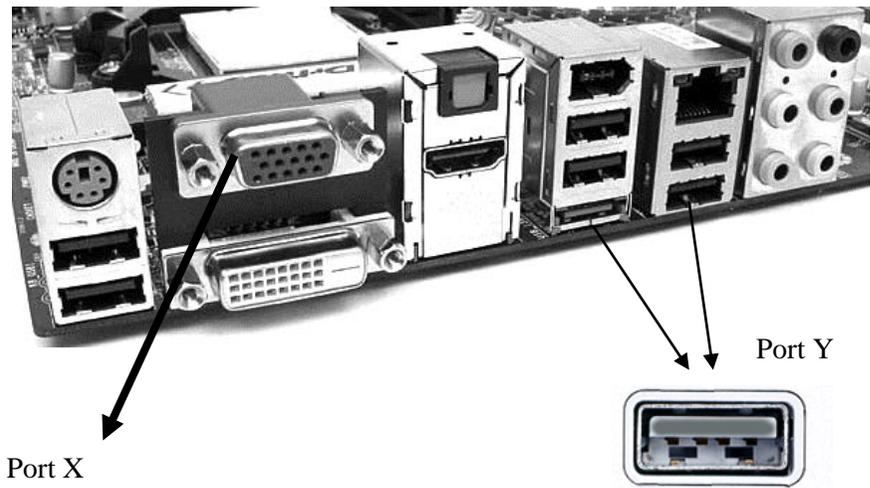11. FIGURE 4 shows the ports of a motherboard.

Port Y

Port X

FIGURE 4

(a) Port X is used to connect to a _____.

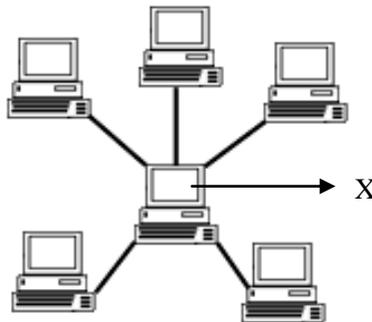(b) Name Port Y.

12. FIGURE 5 shows a computer network.

X

FIGURE 5

(a) Name the topology.

(b) What is the name given to the computer in Position X?

13. The following text describes a type of web editor.

A program which allows a developer to see what the end result will look like while the interface or web page is being created.

Name the type of editor.

14. FIGURE 6 shows a network cable.

FIGURE 6

The network cable is known as _____(a)_____. It uses _____(b)_____ to transmit data.

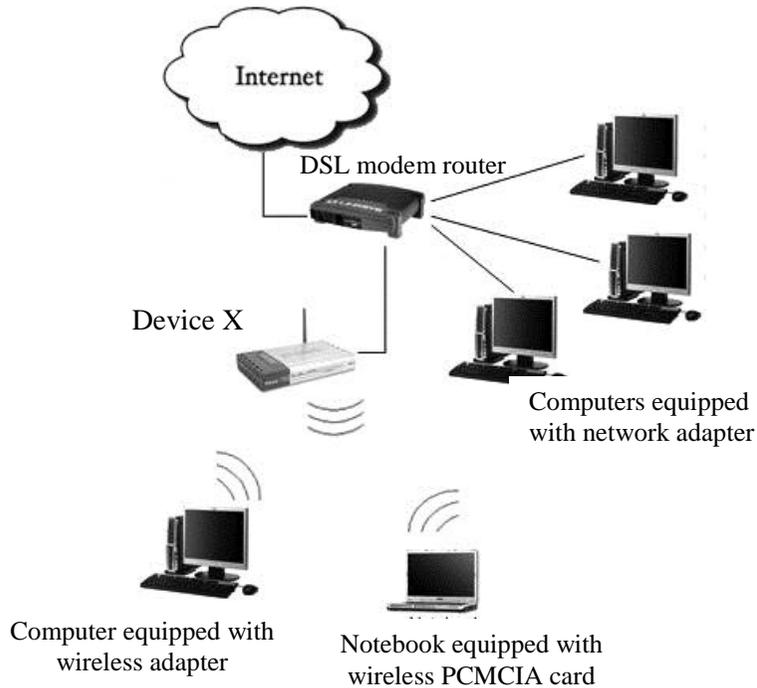|	(a)	(b)
A.	Fiber optics cable	electricity
B.	Fiber optics cable	light
C.	Coaxial cable	electricity
D.	Coaxial cable	light

15. FIGURE 7 shows a computer network.

FIGURE 7

(a) State the function of Device X.

(b) State the type of wireless data transmission medium used.

16. TABLE 2 describes two concepts in authoring tools.

Concept	Description
P	The elements are organized as pages of a book. The pages are linked into an organized sequence.
Q	Multimedia elements and events are organized as objects in a structural framework or process. A flow chart is created to show the organisation of elements.
R	The organizing principle is the frame, which is a temporal state of the display. The default movement of the "playback head" to a new frame refreshes the display automatically.

TABLE 2

Which statement best describes icon based authoring concept?

17. TABLE 3 shows two screen design principles in multimedia development.

A	B
The amount of graphics and text used are absolutely necessary to get the point across. No superfluous text and graphics.	Creates visual consistency in page designs, such as using the same style of headlines, the same style of initial capitals, or the same basic layout from one page to another.

TABLE 3

Identify design principle

(a)   A

(b)   B

18. A multimedia presentation that contains hypertext and hypermedia to control its progress is known as _____ multimedia.

19. A program design was based on the following methods:

    - break the problem into several pieces and work on each piece separately;
    - to solve each piece, treat it as a new problem that can itself be broken down into smaller problems;
    - repeat the process with each new piece until each can be solved directly, without further decomposition.

State the programming approach.

20. FIGURE 8 shows the activities carried out in a program development phase.

a. State the data used for each input item	Input item	Input data
	Price of an item	*100*
b. Write the output based on the input data	Output item	Actual Output
	Discounted price	*90*
c. Name of the executable file	*Discount.exe*	

FIGURE 8

Name the phase.

21. An artificial language designed to communicate instructions to a computer is known as _____.

    A.   computer language   C.   English language

    B.   programming language   D.   natural language

22. FIGURE 9 shows the output of a program that helps an elementary-school student learn multiplication. The program above is able to display a question automatically and the student then types the answer into the text field.
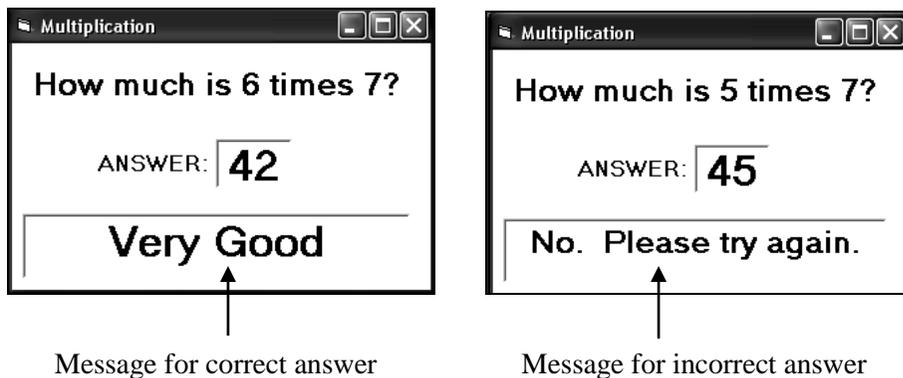

Message for correct answer   Message for incorrect answer

FIGURE 9

    (a)   State the type of control structure used.

    (b)   Identify a variable of the program.

23. State TRUE / FALSE to the following statements.

    (a) Transaction processing system is a computer program application that analyzes business data and presents it so that users can make business decisions more easily.

    (b) Management information system provides management with feedback and periodic or pre-specified generic reports.

24. Statement 1

"A collection of related files that are organized so that it can easily be accessed, managed, and updated."

Statement 2

"A collection of software that controls the creation, maintenance, and the use of an integrated collection of data records and files."

    (a) Statement 1 defines _____.
    (b) Statement 2 defines _____.

25. FIGURE 10 shows two tables

LECTURER

Lecturer Number	Lecturer Name
T345567	Lim Keng Boon
T002122	Tan Siew Mei
T009880	Salmah bt Ahmad
T165555	Muniathy a/p Muthusamy

X ←

Y

COURSE

Course Number	Course Name	Lecturer Number
EC1011	Computing	T345567
EC3211	Maths	T002122
EC4521	Physics	T165555
AD6611	Art	T009880
BM7634	French	T009880

FIGURE 10

    (a) State X.
    (b) Name the key for Y.

QUESTION 26

Paula wants to go on holiday with her friends and has used a spreadsheet to work out how much she needs to save.   FIGURE 11 shows the worksheet prepared by Paula.

	A	B	C	D
1	Item	Cost of one (RM)	Number needed	Total cost of item (RM)
2	Flights	399.00	1	399.00
3	Hotel (for 1 night)	200.00	7	1400.00
4	Evening meals	30.00	7	210.00
5	Spending money per day	100.00	7	700.00
6	Large travel bag	54.60	1	54.60
7	Special excursion	120.00	2	240.00
8	Total cost of holiday			3003.60
9				

FIGURE 11

Explain two advantages to Paula of using a spreadsheet for this task rather than word processor.   [4 marks]

QUESTION 27

SMK Seri Gemilang is currently recording the students' attendance manually.   Each form teacher marks the students' attendance by placing 'O' in columns which correspond to absent students.

The principal intends to implement a new attendance system as follows:
- install badge readers stationed at every entrance to the school, linked online to the school's administration computer.
- every student has a badge which is used to 'clock' in or out.

(a) Give two reasons to support the implementation of new attendance system.
                                                                    [2 marks]

(b) Give two drawbacks of new attendance system as compared to the existing system.   [2 marks]

QUESTION 28

FIGURE 12(a) and FIGURE 12(b) show two different network topologies.

Network A

FIGURE 12(a)

Network B
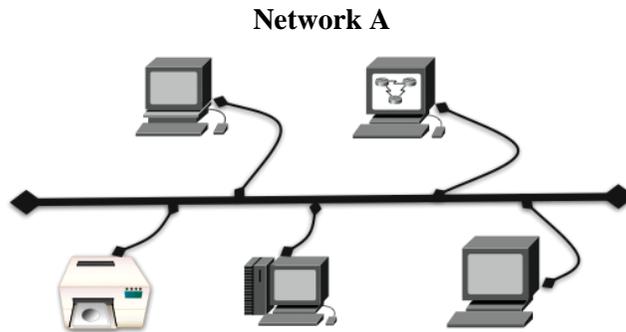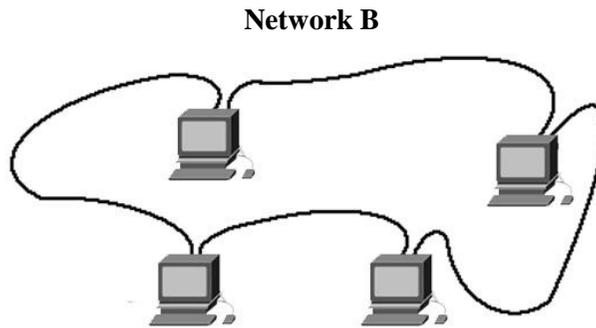

FIGURE 12(b)

(a) State the difference on how data would be sent from one computer to another computer in Topology A and Topology B.   [2 marks]

(b) Give the condition that will cause the whole network failure in

      i.   Topology A
     ii.   Topology B   [2 marks]

QUESTION 29

Every year, Yayasan TEN invites qualified form 5 students with excellent academic achievements, pleasant personality and who are active in co-curricular activities to apply for scholarships to pursue higher education at both local and overseas universities. An applicant will be chosen for an interview if he/she fulfills the criteria as follows:

- *obtained a minimum of 8A+ in SPM trial exam*
- *achieved a GPA (Grade Point Average) of at least a "B" in co-curricular activities*

FIGURE 13 shows the algorithm to select the students who shall be called for interview.

```
BEGIN
    Read applicant's name, IC number, number of A+, GPA
    If  expression X  then
         Message = "This student is chosen for an interview"
    Else
         Message = "This student is not chosen for an interview"
    End if
    Print message
END
```

FIGURE 13

(a) State the type of operator used. Justify your answer   [2 marks]

(b) Write *expression X.*   [2 marks]

QUESTION 30

FIGURE 14(a) shows parts of data in a clinic management system and FIGURE 14(b) shows a query design for retrieving information from the system.

Patient : Table

	PatientID	ICNO	Name	Address	ContactNo
	0001	781106041234	Salmah binti Ahmad Khamis	3, Jalan Perak	0125623212
	0002	801211076532	Lim Ai Ling	12, Jalan Ipoh	0122266321
	0003	560702064532	Fauzi bin Mohd Imran	24, Jalan Kenangan	0144327322
	0004	731023074655	Lau Sin Yan	34, Jalan Halim	0165738423
	0005	690603075634	Mong Hui Ling	19, Jalan Telipok	0193485731

Record: 6 of 6

Appointment : Table

	PatientID	Date	Time
	0001	23/02/2011	3.00pm
	0002	23/03/2011	4.00pm
	0003	23/04/2011	8.00am
	0004	24/04/2011	8.30am
	0003	25/01/2011	9.00am
	0005	25/05/2011	5.00pm

Record: 7 of 7

FIGURE 14(a)

QueryAppointment : Select Query

Patient
PatientID
ICNO
Name

Appointment
*
PatientID

Field:	PatientID	Name	Time	Date	ContactNo
Table:	Appointment	Patient	Appointment	Appointment	Patient
Sort:				Ascending	
Show:	☑	☑	☑	☑	☑
Criteria:	"0003"				

FIGURE 14(b)

Based on the information given in FIGURE 14(a) and FIGURE 14(b),

(a) Write the query results. [2 marks]

(b) Describe the interrelation between :

    i.   *procedures and people*
    ii. *data and software*   [2 marks]

12

SECTION C [14 marks]

QUESTION 31

An agency arranges booking of live band for a number of clubs. Each band is registered with the agency and has its name recorded, together with the number of musicians, the types of music played and hiring fee. Each band is managed by a manager. A manager may manage several bands. Each manager is assigned an identification number and managers have their name, address and telephone number recorded.

Draw **TWO** tables and show one–to–many relationship between two tables. Underline the primary key for each table. [7 marks]

QUESTION 32

Encik Faizal, a form one Science teacher intends to produce an interactive multimedia teaching courseware. The following are several features required in the courseware:
- learning notes
- interactive assessment exercise
- course chat, this feature provides guidance to learners if any
- course announcement
- learner's progress reports

(a) State three activities which will be carried out by Encik Faizal in implementation phase. [3 marks]

(b) Suggest the most suitable delivery medium for the multimedia application. Give three reasons to support your suggestion. [4 marks]

QUESTION 33

A computer store sells two different types of ink cartridges for a popular inkjet printer. The brand name cartridge is sold for RM 125.50 and the generic cartridge is sold for RM 58. A customer will receive a 20% discount if her/his purchase exceeds RM 500.

You are asked to develop a program that calculates the total amount to be paid by a customer.
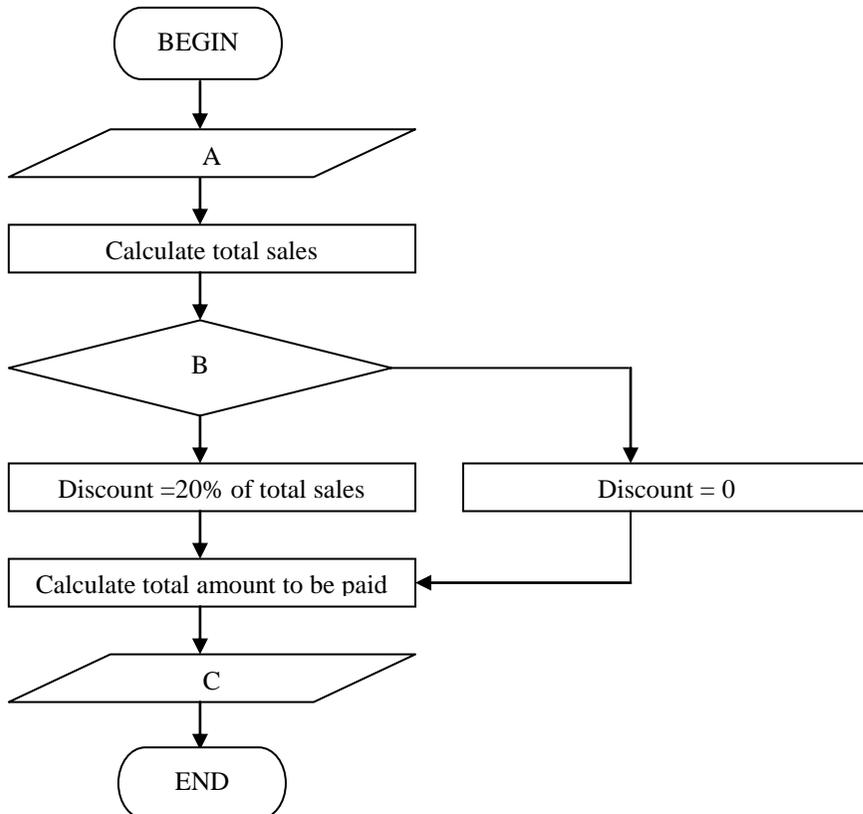
FIGURE 15 shows the program flowchart.

```
                    ┌──────────────┐
                    │    BEGIN     │
                    └──────────────┘
                            │
                            ▼
                    ╱───────────────╲
                   ╱        A         ╲
                  ╱───────────────────╱
                            │
                            ▼
                 ┌──────────────────────┐
                 │  Calculate total sales│
                 └──────────────────────┘
                            │
                            ▼
                    ◇───────────────◇
                   ◇        B         ◇──────────────┐
                    ◇───────────────◇                │
                            │                         │
                            ▼                         ▼
         ┌──────────────────────────┐   ┌──────────────────────┐
         │ Discount =20% of total sales│ │     Discount = 0      │
         └──────────────────────────┘   └──────────────────────┘
                            │                         │
                            ▼                         │
         ┌──────────────────────────┐◄───────────────┘
         │ Calculate total amount to be paid│
         └──────────────────────────┘
                            │
                            ▼
                    ╱───────────────╲
                   ╱        C         ╲
                  ╱───────────────────╱
                            │
                            ▼
                    ┌──────────────┐
                    │     END      │
                    └──────────────┘
```

FIGURE 15

(a) Write the formula to calculate the total amount to be paid by a customer.

[3 marks]

(b) Complete A, B and C. [4 marks]

END OF QUESTION PAPER

Prepared by OLP　　　　　　Checked by CPL　　　　　　Approved by

Answer Sheet

NAME: _____(   ) **CLASS:** _____

Question No.		Candidate's Answer	
1	**(a)**		**1**
	(b)		**2**
2			**3**
3			**4**
4	**(a)**		**5**
	(b)		**6**
5			**7**
6	**(a)**		**8**
	(b)		**9**
7			**10**
8			**11**
9			**12**
10			**13**
11	**(a)**		**14**
	(b)		**15**
12	**(a)**		**16**
	(b)		**17**
13			**18**
14			**19**

Question No.		Candidate's Answer	Marks
15	(a)		20
	(b)		21
16			22
17	(a)		23
	(b)		24
18			25
19			26
20			27
21			28
22	(a)		29
	(b)		30
23	(a)		31
	(b)		32
24	(a)		33
	(b)		34
25	(a)		35
	(b)		36

PERHATIAN

** SKIMA TIADA

Cikgu-cikgu bolehlah cari sendiri.