

SULIT



BAHAGIAN PEPERIKSAAN DAN PENILAIAN  
JABATAN PENDIDIKAN POLITEKNIK  
KEMENTERIAN PENDIDIKAN TINGGI

JABATAN PENGAJIAN AM

PEPERIKSAAN AKHIR

SESI 1: 2015/2016

**BUE3033: ENGLISH FOR ENGINEERING & TECHNOLOGY**

**TARIKH : 30 DISEMBER 2015**

**MASA : 8.30 AM – 11.30 AM (3 JAM)**

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Kertas ini mengandungi **LAPAN (8)** halaman bercetak.

Bahagian A: Struktur (4 soalan)

Bahagian B: Esei (2 soalan)

Dokumen sokongan yang disertakan : Tiada

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**JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIARAHKAN**

(CLO yang tertera hanya sebagai rujukan)

SULIT

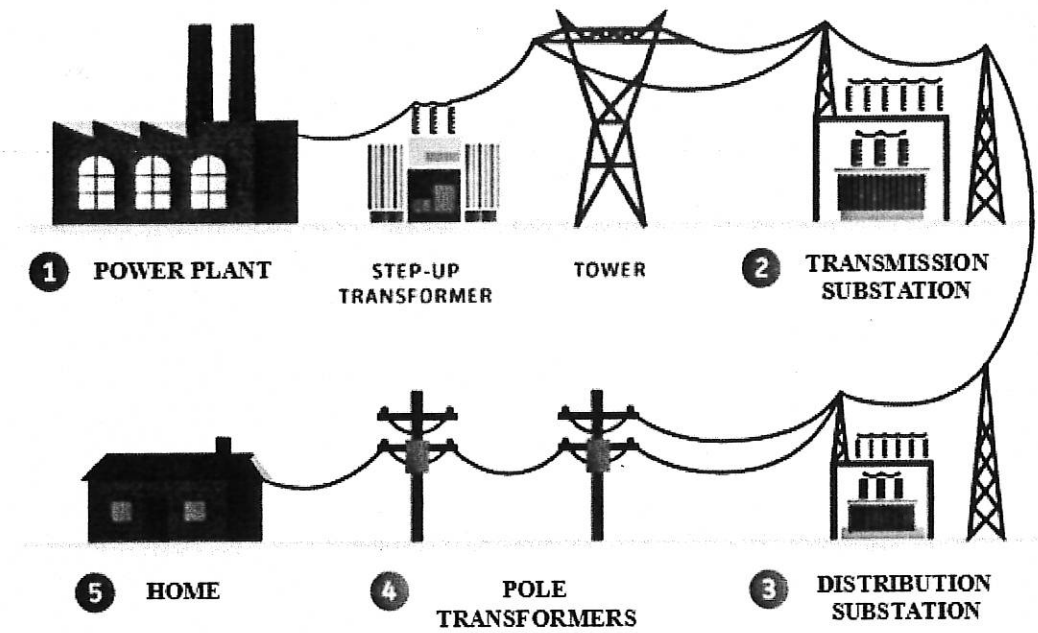
## SECTION A: 40 MARKS

## INSTRUCTION:

This section consists of **FOUR (4)** structured questions. Answer **ALL** questions.

CLO1  
C2

**QUESTION 1**



Figure

The diagram above illustrates how electricity is transferred to our house. Describe the process by using the words provided below.

1. Electricity – generated [2 marks]
2. Electricity voltage - increased [2 marks]
3. Electricity voltage - decreased [2 marks]
4. The transformer - decreased - electricity voltage – house [2 marks]
5. Electricity - house - 230 / 240 Volts [2 marks]

CLO3  
C3

## QUESTION 2

The following table shows comparison between two operating systems – Mac and Windows. Study the information in the table and answer the questions.

| Comparison                  | Operating Systems  |   |
|-----------------------------|--|---|
|                             | Mac  | Windows   |
| <b>What is it?</b>          | Short form for "Macintosh" and refers to any computer produced by Apple, Inc.  | Refers to any computer running IBM-Based (Windows, Linux, Solaris, FreeBSD) operating systems. stands for "Personal Computer"   |
| <b>Cost</b>                 | Computers start at \$499 for the Mac Mini desktop, \$899 for the Macbook Air notebook, and \$1099 for the iMac all-in-one. Other models are more expensive. For desktop or home use Macs are generally expensive than a PC.          | Compared to a Mac, Windows and Windows-associated hardware is cheaper, and you can build your own for even less money. Comparable computers running Windows can be found around 40% cheaper than a Mac. |
| <b>User</b>                 | Home users and businesses (mainly in the creative department)  | Home users and businesses   |
| <b>Popular Applications</b> | Photos, iMovie, GarageBand, Pages, Numbers, Keynote, Safari, Mail, Messages, FaceTime, Calendar, Contacts, App Store, iTunes, iBooks, Maps, Photo Booth, Time Machine  | MS Office, Internet Explorer, Media Player, Media Center, Windows Defender, SkyDrive, VLC media player, Chrome browser  |
| <b>Compatibility</b>        | Can open almost all PC files and can coexist on local networks with PCs. Can open .doc, .exe (as a compressed bundle), .xls, and others. Software exists for other file types. Can also run Windows on a Mac for 100% compatibility. | Mac-based files (.DMG) cannot be opened on PCs natively, but you can install software that can read, and possibly write Mac-based files on a PC.  |
| <b>Virus Attacks</b>        | Since Macs are not as popular as PCs, there are fewer malware written to target Macs, although the threat of malicious software is growing, like from Java.  | Being the popular desktop choice, most virus writers target Windows systems, however, Linux often has less malware.   |
| <b>Messaging</b>            | Messages (using iMessage, Google Talk, etc.)   | Skype, Facebook, and Twitter  |

Based on the information given, choose the most suitable operating system for the following departments according to their needs. Give a reason for your choice.

- i. **Purchasing Department** – wanting something economical

( ) Mac ( ) Windows

Reason:

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- ii. **Marketing Department** – relying on social networks for marketing

( ) Mac ( ) Windows

Reason:

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- iii. **Security Department** – emphasising on network security

( ) Mac ( ) Windows

Reason:

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- iv. **Research & Development Department** – involving creative designs

( ) Mac ( ) Windows

Reason:

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- v. **Administration Department** – handling all sorts of file formats

( ) Mac ( ) Windows

Reason:

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[10 marks]

CLO4  
C3  
QUESTION 3

On 1 January 2015 Mr. Daniel was appointed by Multi-National Corp as one of the engineers to supervise 50 technicians. A week later, he was asked by his manager, Mr. Johnny Lau to be in charge of the EYEZ shopping complex construction site. He started to prepare a report on the day that the task was given. The construction work started on 8 January at 2.00pm. The report needs to be completed by 30<sup>th</sup> June 2015. The details to be included in the report are as follows:

1. Construction progress meeting
2. Assessment of design issues
3. Assessment of health and safety issues
4. Assessment on issues pertaining to hazards (noise, dust, access and etc)
5. Costing of materials
6. Analysis on weather

a) What is the type of report that Mr. Daniel has to prepare?

[1 mark]

b) Prepare the report using the following details:

- |  |            |
|--|------------|
| i. Title                                       | [1/2 mark] |
| ii. Date                                       | [1/2 mark] |
| iii. To  | [1/2 mark] |
| iv. From                                       | [1/2 mark] |
| v. Subject                                     | [1 mark]   |
| vi. Purpose                                    | [1 mark]   |
| vii. Background                                | [1 mark]   |
| viii. Scope                                    | [1 mark]   |
| ix. Tasks Completed                            | [1 mark]   |
| x. Conclusion (comment on any two tasks given) | [2 marks]  |

## SECTION B: 60 MARKS

## INSTRUCTION:

This section consists of TWO (2) essay questions. Answer ALL questions.

CLO3  
C4  
QUESTION 1

Read a simple report below regarding the differences between two nuclear reactors and answer the given questions.

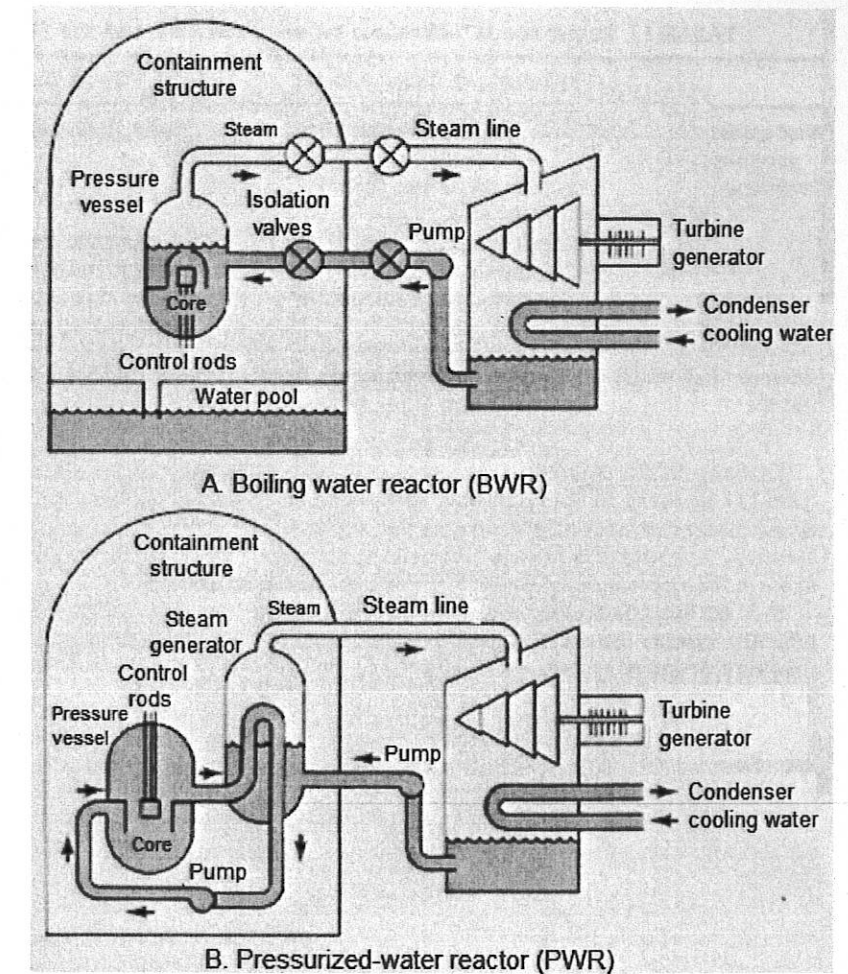


Figure 2: The basic operation of pressurized water and boiling water reactors.

**Comparison of Nuclear Reactors**

A nuclear power reactor uses fission reactions to produce thermal energy that is converted to electrical energy. One common class of nuclear reactor is the light water reactor which uses light water as a moderator and as a coolant. There are two types of light water reactors: the pressurized water reactor and the boiling water reactor.

**Basic Operation**

Basically, the operations of the pressurized water reactor (PWR) and the boiling water reactor (BWR) are similar as *Figure 1* shows. Water flows through the reactor core, steam is produced, the steam proceeds to turn a turbine-generator, electricity is produced, the steam is converted back to water, and the process is repeated.

**Comparison of PWR and BWR**

The differences in the operations of the two light water reactors involve (a) the method in which the steam is produced, (b) the pressure in the system, and (c) the process through which the steam goes through after being produced.

**Steam Production.** In a pressurized water reactor, the primary coolant, after passing through the core and absorbing heat, proceeds to a secondary system consisting of a steam generator. The primary coolant then flows through many hundreds of small stainless-steel tubes in the heat-exchangers, which are part of the steam generator. These heat-exchanger tubes are surrounded by the water of the secondary system which is heated by the primary coolant in the tubes. Wet steam is then produced. Unlike the pressurized water reactor, the steam in a boiling water reactor is introduced directly into the core. Jet pumps circulate the coolant water along the individual fuel rods in each fuel assembly in the core where it boils and becomes a two-phase steam-water mixture.

**Pressure in the System.** The pressure in a pressurized water reactor varies from the primary to the secondary system. In the primary system, the pressure is maintained at about 2250 pounds per square inch to prevent steam from forming. The pressure is then lowered for steam, at 600 pounds per square inch, to form. The pressure is controlled by a pressurizer. In contrast, the boiling water reactor operates at constant pressure. The primary system operates at pressure about one-half that of a pressurized water reactor's primary system while producing steam of equal quality.

**Process of Generated Steam.** After the wet steam is formed in a pressurized water reactor, it passes upward through the risers and enters the steam-separator portion of the steam generator. Here the moisture is removed and returned to the heat-exchanger portion of sections through the downcomers. The dry and saturated steam leaves the top of the steam separator and goes to the turbine. The wet steam formed in a boiling water reactor leaves the core and also goes through a steam separator. However, unlike the pressurized water reactor, the steam goes through a steam dryer, where additional moisture is removed. The steam then proceeds to the turbine. This steam, unlike that of the pressurized water reactor, is radioactive.

**Conclusion**

Thus, even though the pressurized water reactor and the boiling water reactor are generally similar in operation, there are four main differences between the two systems. The steam in a pressurized water reactor is produced in a secondary system while the steam in boiling water reactor is produced directly in the reactor core.

The pressure of a pressurized boiling reactor varies from the primary system to the output steam while the pressure of a boiling water reactor remains constant. The steam in a pressurized water reactor after coming out of the steam separator proceeds directly to the turbine while the steam in a boiling water reactor, after coming out of the steam separators, proceeds to a steam dryer and then to the turbine. The steam produced in a boiling water reactor is radioactive, whereas the steam produced in a pressurized water reactor is not.

1 (a). In paragraph form, compare the information given in the text by discussing **THREE (3)** differences between these two reactors.

[20 marks]

(b). Draw a table to summarise the differences between the PWR and the BWR.

[10 marks]

CLO4  
C5**QUESTION 2**

Encik Arman is one of the Occupational Safety and Health officers at Qantas Engineering Sdn Bhd. On 12 December 2015, the company was sabotaged by an intruder who set fire and burnt all the important documents which include proposals of new projects and sketches of buildings. On the next day, Encik Arman was requested by his manager, Encik Rahman to investigate and write a report describing the problem encountered for a presentation at a Board Meeting on 19 December 2015.

From your investigation, Encik Arman identified these problems with the alarm system:

- 1) Inadequate number of sensors installed
- 2) The non-coverage area of sensor was intruded
- 3) The smoke detector was not functioning
- 4) The landline was cut so the system failed to send out alert

Prepare a **problem analysis report** on the problems encountered and provide two solutions for each problem.

[30 marks]

**END OF QUESTIONS**