

STRUCTURED : 100 MARKS

STRUKTUR : 100 MARKAH

INSTRUCTION:

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

ARAHAN:

Bahagian ini mengandungi EMPAT(4) soalan struktur. Jawab semua soalan.

QUESTION 1

SOALAN 1

- (a) **LIST THREE (3)** conventional power plant and **THREE (3)** non-conventional power plant.

Senaraikan TIGA (3) lojikuasa konvensional dan TIGA (3) lojikuasa tidak konvensional.

[6 marks]

[6 markah]

- (b) **DISCUSS THREE (3)** ways on how electricity generation industry has contributed to the country development.

BINCANGKAN TIGA (3) cara bagaimana industri penjanaan tenaga menyumbang kepada pembangunan negara.

[6 marks]

[6 markah]

CLO1
C1

CLO1
C2

CLO2
C3

(c) **SKETCH AND EXPLAIN** the types of water tube boiler below: -

- i. A-types
- ii. D – types
- iii. O – types

Lakarkan dan terangkan jenis-jenis dandang tiub air dibawah:-

- i. jenis –A
- ii. jenis – D
- iii. jenis - O

[13 marks]

[13 markah]

SOALAN 2

CLO1
C2

- (a) **EXPLAIN BRIEFLY** an open circuit gas turbine system.

terangkan secara ringkas mengenai sistem turbin gas kitar terbuka.

[4 marks]

[4 markah]

CLO2
C2

- (b) **EXPLAIN** the function of heat recovery equipment which is used in the combined cycle power plant.

TERANGKAN fungsi peralatan pemulihan haba yang digunakan dalam lojikuasa kitar padu.

[6 marks]

[6 markah]

CLO2
C3

- (c) **INTERCOOLING** is one of the methods to increase the efficiency of a gas turbine system. **ILLUSTRATE AND EXPLAIN** the process of intercooling.

Penyejuk antara adalah satu daripada kaedah untuk meningkatkan kecekapan system turbin gas. **GAMBARKAN DAN TERANGKAN** proses penyejuk antara.

[15 marks]

[15 markah]

SOALAN 3

CLO1
C2

(a) **DESCRIBE BRIEFLY** the lubrication system of an engine.

Gambarkan dengan ringkas sistem pelinciran bagi sebuah enjin.

[4 marks]

[4 markah]

CLO2
C2

(b) **COMPARE** between a two-stroke engine and a four-stroke engine.

Bandingkan diantara enjin dua lejang dan enjin empat lejang.

[6 marks]

[6 markah]

CLO2
C3

(c) **SKETCH AND EXPLAIN** the operations principle of four (4) stroke DIESEL ENGINE.

Lakarkan dan terangkan prinsip operasi bagi enjin diesel empat (4) lejang.

[15 marks]

[15 markah]

SOALAN 4

CLO1
C1

(a) **STATE TWO (2)** factors which should be considered when selecting the site for hydroelectric power plant.

Nyatakan DUA (2) faktor yang mesti dipertimbangkan semasa memilih tapak untuk lojikuasa hidroelektrik.

[4 marks]

[4 markah]

CLO1
C2

(b) With the aid of a diagram, **ILLUSTRATE and EXPLAIN** the working principle of a **Boiling Water Reactor (BWR)** in a nuclear power plant.

Dengan bantuan gambarajah, GAMBARKAN dan TERANGKAN prinsip kerja bagi sebuah reaktor air mendidih dalam loji kuasa nuklear.

[8 marks]

[8 markah]

CLO2
C3

(c) **DRAW** a diagram of Hydroelectric Power Plant and **EXPLAIN** how it works.

LUKISKAN satu gambarajah loji kuasa hidroelektik dan TERANGKAN bagaimana ia berfungsi.

[13 marks]

[13 markah]

SOALAN TAMAT