

**SULIT**



**BAHAGIAN PEPERIKSAAN DAN PENILAIAN  
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI  
KEMENTERIAN PENGAJIAN TINGGI**

**JABATAN KEJURUTERAAN MEKANIKAL**

**PENILAIAN ALTERNATIF**

**SESI 1 : 2021/2022**

**DJJ52012 : ENGINEERING PLANT TECHNOLOGY**

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**NAMA PENYELARAS KURSUS : ISMAIL BIN LIAS**

**KAEDAH PENILAIAN : PEPERIKSAAN ATAS TALIAN**

**JENIS PENILAIAN : SOALAN ESEI BERSTRUKTUR (2 SOALAN)**

**TARIKH PENILAIAN : 4 FEBRUARI 2022**

**TEMPOH PENILAIAN : 2 JAM**

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**LARANGAN TERHADAP PLAGIARISM (AKTA 174)**

**PELAJAR TIDAK BOLEH MEMPLAGIAT APA-APA IDEA, PENULISAN, DATA  
ATAU CIPTAAN ORANG LAIN. PLAGIAT ADALAH SALAH SATU  
PENYELEWENGAN AKADEMIK. SEKIRANYA PELAJAR DIBUKTIKAN  
MELAKUKAN PLAGIARISM, PENILAIAN BAGI KURSUS BERKENAAN AKAN  
DIMANSUHKAN DAN DIBERI GRED F DENGAN NILAI MATA 0.**

**(RUJUK BUKU ARAHAN-ARAHAN PEPERIKSAAN DAN KAEDAH PENILAIAN (Diploma) EDISI 6, JUN 2019,  
KLAUSA 17.3)**

**INSTRUCTION:**

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

**ARAHAN:**

*Bahagian ini mengandungi DUA (2) soalan esei berstruktur. Jawab SEMUA soalan.*

**QUESTION 1****SOALAN 1**

CLO1  
C2

- (a) By using a simple diagram, explain how a power plant together with the **SEVEN (7)** main components work.

*Terangkan dengan gambarajah mudah, bagaimana secara asasnya Loji Janakuasa beroperasi termasuk dengan TUJUH (7) komponen yang paling utama.*

[7 marks]  
[7 markah]

CLO1  
C3

- (b) Group of thirteen (13) essential fittings are.

<p style="text-align: center;"><b>Safety Fitting</b></p> <p>Safety valves, Gauge glasses, Pressure gauge, Low water alarm, Low-water fuel cut-off, Fusible plug</p>	<p style="text-align: center;"><b>Legal Fitting</b></p> <p>Inspector's test attachment, Registration plate, and Manufacturer's name plat</p>	<p style="text-align: center;"><b>Control Fitting</b></p> <p>Blowdown valve, main steam stop valve, feedwater check valve, feedwater pumps.</p>
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By referring to the above statement, sketch the accurate schematics diagram and show the accurate location for Legal fitting and Control fitting.

*Tigabelas (13) alatan lekapan dikelaskan seperti,*

<p style="text-align: center;"><b>Kelengkapan keselamatan</b></p> <p><i>Injap keselamatan, kaca cerap, injap tekanan, penggera turus air-rendah, pemutus bekalan bahan bakar (air-rendah) dan palam boleh lebur.</i></p>	<p style="text-align: center;"><b>Kelengkapan peraturan</b></p> <p><i>Inspector's test attachment, Registration plate, and Manufacturer's name plat.</i></p>	<p style="text-align: center;"><b>Keleapan kawalan</b></p> <p><i>Blowdown valve, main steam stop valve, feedwater check valve, feedwater pumps.</i></p>
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*Merujuk kepada pernyataan di atas, lakarkan gambarajah skematik dan tunjukkan lokasi dengan tepat hanya untuk Alatan Kelengkapan Peraturan dan Alat Kelengkapan Kawalan.*

[11 marks]  
[11 markah]

CLO1  
C4

(c) Determine **FOUR (4)** usages of steam or application of steam in the power plant industry and determine **THREE (3)** types of inspection for boiler tube or drum failure.

*Tentukan **EMPAT (4)** contoh kegunaan stim atau aplikasi penggunaan stim di dalam industry loji Janakuasa dan juga tentukan **TIGA (3)** jenis penyiasatan berkenaan kegagalan pada tiub dandang atau drum.*

[7 marks]  
[7 markah]

**QUESTION 2****SOALAN 2**CLO2  
C2

- (a) Explain, the basic principle of operation for closed-ended gas turbine system.

*Terangkan, prinsip asas pegoperasian untuk kitar tertutup system gas turbine*

[5 marks]

[5 markah]

CLO2  
C2

- (b) Elaborate **THREE (3)** additional components that can improve the performance in a gas turbine power plant.

*Huraikan, sekurangya minimum TIGA (3) komponen tambahan yang dapat meningkatkan prestasi di dalam loji gas turbin*

[7 marks]

[7 markah]

CLO2  
C3

- (c)

**“Combined cycle power plants is the higher efficiency of energy produce.”**

Based on the above statement, sketch a combined cycle steam turbine power plant with a gas turbine power plant and explain how it works.?

**“Kitar gabungan loji janakuasa adalah suatu tenaga berkecekapan tinggi”**

*Berdasarkan kenyataan seumpama di atas, lakarkan kitaran gabungan di antara loji janakuasa turbin stim dengan loji janakuasa turbin gas serta terangkan bagaimana ianya beroperasi?*

[13 marks]

[13 markah]

**SOALAN TAMAT**