

SULIT



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

JABATAN KEJURUTERAAN MEKANIKAL

PENILAIAN ALTERNATIF

SESI DISEMBER 2020

DJJ6182 : ENGINEERING PLANT TECHNOLOGY

NAMA PENYELARAS KURSUS : ISMAIL BIN LIAS

KAEDAH PENILAIAN : PEPERIKSAAN ONLINE

JENIS PENILAIAN : SOALAN ESEI BERSTRUKTUR (2 SOALAN)

TARIKH PENILAIAN : 6 JULAI 2021

TEMPOH PENILAIAN : 1 JAM

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**

CLO2
C3

(a) Group of thirteen essential fittings are;

Safety Fitting

Safety valves, Gauge glasses, Pressure gauge, Low water alarm, Low-water fuel cut-off, Fusible plug

Legal Fitting

Inspector's test attachment, Registration plate, and Manufacturer's name plat

Control Fitting

Blowdown valve, main steam stop valve, feedwater check valve, feedwater pumps.

Referring to the above statement, illustrate the accurate schematics diagram and location for Safety fitting and Control fitting.

Tigabelas alatan lekapan dikelaskan seperti;

Kelengkapan keselamatan

Injap keselamatan, kaca cerap, injap tekanan, penggera turus air-rendah, pemutus bekalan bahan bakar (air-rendah) dan palam boleh lebur.

Kelengkapan peraturan

Inspector's test attachment, Registration plate, and Manufacturer's name plat.

Keleapan kawalan

Blowdown valve, main steam stop valve, feedwater check valve, feedwater pumps.

Merujuk kepada pernyataan di atas, ilustrasikan gambarajah skema dan lokasi yang tepat hanya untuk alatan kelengkapan keselamatan dan alat kelengkapan kawalan.

[11 marks]

[11 markah]

CLO2
C4

(b) Based on the statement below, draw 4 bypass firetube boiler including the hot gasses flow direction, steam out and hot gasses out.

<p>4 bypass firetube boilers; Maximized heat transfer, minimal refractory, high steam/water storage and effective handling of wide load demands.</p>	<p>Each set of tubes that hot combustion flue gas travels through before making a turn within the boiler, is considered a "pass".</p>
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Berdasarkan pernyataan di bawah, lukiskan dandang tiub api jenis 4 laluan termasuk arah aliran gas panas, stim keluar dan gas panas keluar.

<p>Dandang tiub api jenis 4 laluan <i>Memaksimakan pengaliran haba, meminimakan referaktori, penyimpanan wap / air yang tinggi dan pengendalian yang berkesan permintaan terhadap luas beban.</i></p>	<p><i>Setiap set tiub gas panas pembakaran yang melalui sebelum membuat perubahan arah dalam dandang, dianggap "laluan".</i></p>
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[7 marks]

[7 markah]

CLO1
C5

(c) Any technology has its advantages and disadvantages especially when using gas turbine power plant in terms of energy production. Choose **FOUR (4)** advantages and **THREE (3)** disadvantages gas turbine power plant.

*Sepertimana diketahui setiap teknologi mesti mempunyai kelebihan dan kekurangan terutamanya apabila menggunakan loji janakuasa turbin gas dari segi menghasilkan tenaga. Tentukan **EMPAT (4)** kelebihan dan **TIGA (3)** kelemahan loji janakuasa turbin gas.*

[7 marks]

[7 markah]

QUESTION 2**SOALAN 2**CLO1
C3

(a)

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

Based on the above statement, interpret the operation of the combined cycle (steam turbine power plant with gas turbine power plant).

“Kitar gabungan loji janakuasa adalah suatu tenaga berkecekapan tinggi”

Berdasarkan kenyataan seumpama di atas, interpretsikan kitaran gabungan di antara loji janakuasa turbin stim dan loji janakuasa turbin gas ini berkerja.

[13 marks]

[13 markah]

CLO2
C4

(b) The operation cycle of two stroke diesel engines is comprised of the upward stroke and the downward stroke. Draw the fuel injector, exhaust valves, air chest, air inlet and blower in an upward stroke of a two-stroke diesel engine. *Kitar suatu enjin diesel dua lejang terdiri daripada lejang atas dan lejang bawah. Gambarkan pemancit minyak, injap ekzos, kebuk udara, alur masuk udara dan penghembus udara di dalam lejang atas suatu enjin diesel dua lejang.*

[5 marks]

[5 markah]

CLO2
C5

(d) As a new technician in power plant station, with the aid of a diagram, compare between impulse turbine and reaction turbine to your steam engineer.

Sebagai juruteknik baru di stesen janakuasa, terangkan perbandingan berdasarkan gambarajah mudah di antara turbin dedenyut dengan turbin tindak balas kepada jurutera stim anda.

[7 marks]

[7 markah]

SOALAN TAMAT