
Started on 5 April 2025

State Finished

Completed on

Time taken

Marks 32.00/35.00

Grade 91.43 out of 100.00

Question 1

Correct

Mark 1.00 out of 1.00

What is UNIC-Flex controlled engine?

Select one:

- A. Electronic Controlled Engine
- B. No Camshaft
- C. Common Rail Engine
- D. All of the above ✓

Your answer is correct.

Question 2

Incorrect

Mark 0.00 out of 1.00

What are the advantages of variable exhaust valve timing?

Select one:

- A. Optimized Exhaust Gas Temp ✗
- B. Optimized MIP
- C. Optimized Pcomp
- D. Optimized Pmax

Your answer is incorrect.

Question 3

Correct

Mark 1.00 out of 1.00

What is the purpose of servo oil service pump (look on control diagram)?

Select one:

- A. To keep the oil rail pressurized when one or both servo oil pumps have failed
- B. To pressurize the servo oil rail in order to simulate EXV open/close and cylinder lubrication when engine is standstill ✓
- C. To pressurize the servo oil rail when engine start
- D. To supply high pressure hydraulic oil to VCUs when engine is running

Your answer is correct.

Question 4

Correct

Mark 2.00 out of 2.00

What is the consequence if the elect fuel pump actuator power fails?

Select one or more:

- A. The other fuel pumps compensate the fuel pressure in case of low or high fuel pressure ✓
- B. The fuel pump w/ damaged elect actuator can manually set to a certain position, ✓
- C. The related fuel pump will go to maximum position
- D. Engine shut down

Your answer is correct.

Question 5

Incorrect

Mark 0.00 out of 1.00

If you increase the angle value (+) of the Injection Begin Offset, what will be the consequence?

Select one:

- A. Pcomp will be increased
- B. Pmax will be increased ✖
- C. Pmax will be decreased
- D. Pcomp will be decreased

Your answer is incorrect.

Question 6

Partially correct

Mark 2.00 out of 3.00

What is the specific function of MCM-11?

Select one or more:

- A. Engine Speed Control ✔
- B. External Bus Interfacing ✔
- C. Digital Interface to CCM-20
- D. Digital Signal to Angle Sensor

Your answer is partially correct.

You have correctly selected 2.

Question 7

Correct

Mark 2.00 out of 2.00

What is the specific function of CCM-20?

Select one or more:

- A. Engine Speed Control
- B. Cylinder Function ✓
- C. Distributed Engine Functions ✓
- D. All of the above

Your answer is correct.

Question 8

Correct

Mark 1.00 out of 1.00

What is the specific function of IOM?

Select one:

- A. Data Acquisition ✓
- B. Speed Sensing
- C. Distributed Engine Functions
- D. All of the above

Your answer is correct.

Question 9

Correct

Mark 2.00 out of 2.00

What is the use of LDU?

Select one or more:

- A. Data Acquisition
- B. Local User Interface ✓
- C. External Bus Interface ✓
- D. All of the above

Your answer is correct.

Question 10

Correct

Mark 1.00 out of 1.00

What will happen if we activate heavy sea mode on the LDU?

Select one:

- A. Fuel Rail Pressure will be steady
- B. VIT will be switched off
- C. All injectors active
- D. All of the above ✓

Your answer is correct.

Question 11

Correct

Mark 1.00 out of 1.00

This is necessary for DF engine to have accurate control of the gas pressure and the changes of the load condition,

Select one:

- A. GAV
- B. GVU ✓
- C. GTD
- D. GMT

Your answer is correct.

Question 12

Correct

Mark 1.00 out of 1.00

From what sensor signal that ECS uses to adjust the timing of the gas supply which is related to the engine load?

Select one:

- A. Exh V/v stroke sensor
- B. FIV pilot sensor
- C. GAV stroke sensor ✓
- D. FLV piston stroke

Your answer is correct.

Question 13

Correct

Mark 1.00 out of 1.00

What controls the gas quantity, independently for each cylinder to adjust the engine load?

Select one:

- A. PCS
- B. ECS ✓
- C. ESS
- D. AMS

Your answer is correct.

Question 14

Correct

Mark 1.00 out of 1.00

How many Gas Admission Valve per cylinder in DF engines?

Select one:

- A. 1
- B. 2 ✓
- C. 3
- D. 4

Your answer is correct.

Question 15

Correct

Mark 1.00 out of 1.00

How many Pilot Injection Valve per cylinder in DF engines?

Select one:

- A. 1
- B. 2 ✓
- C. 3
- D. 4

Your answer is correct.

Question 16

Correct

Mark 1.00 out of 1.00

Must be installed at each end of the bus cable to avoid signal reflection.

Select one:

- A. Diode
- B. Resistor ✓
- C. Transistor
- D. Capacitor

Your answer is correct.

Question 17

Correct

Mark 1.00 out of 1.00

This type of bus system used for PCS?

Select one:

- A. Ethernet
- B. Can Open Bus ✓
- C. Mod bus
- D. Terminal Bus

Your answer is correct.

Question 18

Correct

Mark 1.00 out of 1.00

How many mm is the required air gap for the crank angle sensor pick-up?

Select one:

- A. 4mm ✓
- B. 3mm
- C. 5mm
- D. 14mm

Your answer is correct.

Question 19

Correct

Mark 1.00 out of 1.00

What is in-charge of the Internal Control System?

Select one:

- A. PCS
- B. AMS
- C. ESS
- D. UNIC-Flex ✓

Your answer is correct.

Question 20

Correct

Mark 1.00 out of 1.00

At UNIC-Flex, these 2 modules are the one interface with external control system?

Select one:

- A. LDU & CCM1
- B. LDU & IOM
- C. LDU (ECR) & MCM
- D. LDU (ER) & MCM-11 ✓

Your answer is correct.

Question 21

Correct

Mark 1.00 out of 1.00

The UNIC-Flex hardware assigned to energize the common start valve?

Select one:

- A. LDU & MCM
- B. MCM & IOM ✓
- C. MCM & CCM
- D. CCM & IOM

Your answer is correct.

Question 22

Correct

Mark 1.00 out of 1.00

This type of bus system protocol is the connection used by the external control system, PCS and AMS to and from the UNIC-Flex modules.

Select one:

- A. PCS Bus
- B. Terminal Bus
- C. Ethernet Bus
- D. Can Open and Mod Bus ✓

Your answer is correct.

Question 23

Correct

Mark 1.00 out of 1.00

Which module serves as the data acquisition unit for the UNIC-flex?

Select one:

- A. LDU
- B. MCU
- C. MCM
- D. IOM ✓

Your answer is correct.

Question 24

Correct

Mark 1.00 out of 1.00

Which of the following is NOT included in the cylinder related functions of the CCM?

Select one:

- A. Cylinder Lubrication
- B. Manual Fuel Injectors
- C. Exhaust Valve Position Sensor
- D. Power Supply Speed Sensor A ✓

Your answer is correct.

Question 25

Correct

Mark 1.00 out of 1.00

Which CCM provides power supply for the BDC sensor?

Select one:

- A. CCM #1
- B. CCM #2 ✓
- C. CCM #3
- D. CCM #4

Your answer is correct.

Question 26

Correct

Mark 1.00 out of 1.00

The CCM-20 activates the flexlube pump through the _____

Select one:

- A. Rail Valve
- B. Valve Control Unit
- C. Solenoid Valve ✓
- D. 3/2-way directional valve

Your answer is correct.

Question 27

Correct

Mark 1.00 out of 1.00

In case of lost setpoint signal in the fuel pump actuator, what will happen?

Select one:

- A. actuator moves to ~5% output ✓
- B. actuator will remain in its position
- C. the actuator moves to 100%
- D. the actuator moves to 50%

Your answer is correct.

Question 28

Correct

Mark 1.00 out of 1.00

In case of power failure in the fuel pump actuator, what will happen?

Select one:

- a. the actuator moves to 0%
- b. actuator will remain in its position ✓
- c. the actuator moves to 100%
- d. the actuator moves to 50%

Your answer is correct.

Question 29

Correct

Mark 1.00 out of 1.00

To enable cylinder lubrication in a cut off unit when the CCM-20 module fails or is being switched off, a special cable connection should be installed to the flexlube pump to the?

Select one:

- A. Neighbour CCM-20 ✓
- B. LDU-20
- C. MCM-11
- D. IOM-10

Your answer is correct.

Question 30

Correct

Mark 1.00 out of 1.00

What pick-up CAS are connected to all CCM-20 Gas module?

Select one:

- A. A, B, TDC
- B. A, B, TDC, BDC ✓
- C. C, D, BDC
- D. C, D, TDC, BDC

Your answer is correct.