

CAMEROON GENERAL CERTIFICATE OF EDUCATION BOARD
Technical and Vocational Education Examination

7165 Diesel Engine Technology 1

JUNE XXXX

ADVANCED LEVEL



Specialty(Specialty Code)	
Centre No.	
Centre Name	
Candidate No.	
Candidate Name	

Mobile phones are **NOT** allowed in the examination room

7165 Diesel Engine Technology 1: MULTIPLE CHOICE QUESTION PAPER

One and a half hours

INSTRUCTIONS TO CANDIDATES

Read the following instructions carefully before you start answering the questions in this paper. Make sure you have a soft HB pencil and an eraser for this examination.

1. USE A SOFT HB PENCIL THROUGHOUT THE EXAMINATION.
2. DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

Before the examination begins:

3. Check that this question booklet is headed **Advanced Level – 7165 Diesel Engine Technology 1**
4. Insert the information required in the spaces above.
5. Insert the information required in the spaces provided on the answer sheet using your HB pencil:
Candidate Name, Exam Session, Subject Code, Centre Number and Candidate Number. Take care that you do not crease or fold the answer sheet or make any marks on it other than those asked for in these instructions.
6. **Answer ALL questions**
7. Each question has FOUR suggested answers: **A, B, C** and **D**. Decide on which answer is correct. Find the number of the question on the Answer Sheet and draw a horizontal line across the letter to join the square brackets for the answer you have chosen.
For example, if **C** is your correct answer, mark **C** as shown below:
[A] [B] **C** [D]
8. Mark only one answer for each question. If you mark more than one answer, you will score a zero for that question. If you change your mind about an answer, erase the first mark carefully, then mark your new answer.
9. Avoid spending too much time on any one question. If you find a question difficult, move on to the next question. You can come back to this question later.
10. Do all rough work in this booklet, using, where necessary, the blank spaces in the question booklet.
11. Texts, notes and pre-prepared materials of any kind are also **NOT** allowed in the examination room.
12. **At the end of the examination, the invigilator shall collect the answer sheet first and then the question booklet after. DO NOT ATTEMPT TO LEAVE THE EXAMINATION HALL WITH IT.**

Turn Over

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1. What will be the consequence of a too small valve clearance?

A	Valve opening lag
B	Valve expansion
C	Valve clearance
D	Valve deformation.

2. What is the role of the cylinder head gasket?

A	To ensure the sealing between the cylinder head and the cylinders block
B	To protect the pistons
C	To constitute the combustion chamber
D	To ensure the oil and drainage duct.

3. Which ring ensures the sealing and avoids oil consumption?

A	Fire segment
B	Burning ring
C	Scraper ring
D	Intermediary or seal ring

4. How do we lubricate cylinder liners?

A	With a pump
B	With a special element
C	By projecting oil on the liners
D	Oil will come from the combustion chamber.

5. What does "SAE" means?

A	Safe the Automotive Engineers
B	Society of Automotive Engineering
C	Society of All Engineers
D	Safety for All Engines

6. With the cold start, the engine needs a:

A	Richer mixture
B	Leaner mixture
C	Chemically equal mixture
D	Weaker mixture

7. Maximum torque is generated by an engine when:

A	It runs at lowest speed
B	It develops maximum power
C	It consumes maximum fuel
D	It runs at maximum speed

8. The Diesel mixture cycle is the combination of two cycles in which

A	All the combustible gas burns at constant volume and a part at constant pressure
B	One part of combustible gas burns at constant volume and another at constant pressure
C	All the combustible gas burns at constant volume and constant pressure
D	All the combustible gas burns at constant

	pressure and at constant pressure.
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9. The compression ratio of the diesel engines is always higher than that of the petrol engines? Because of:

A	Big dimensions of the diesel engines parts
B	The fuel used
C	Self ignition
D	The shape of the combustion chambers

10. At what phase of operation should we bleed a diesel engine?

A	When engine is at idle speed
B	When engine is at rest
C	When engine is at high speed
D	When engine is in full load

11. A common rail direct injection (C.D.I) diesel engine has an active diagnostic trouble code for single cylinder No 3 misfires. This could be caused by:

A	A low compression in cylinder No 3
B	An open circuited No3 cylinder glow plug
C	A short circuited No 3 cylinder glow plug
D	Incorrect fuel cetane rating

12. This exhaust emission is not produced by a diesel engine.

A	CO
B	HC
C	NO _x
D	SiH ₄

13. In an electronic diesel injection system, which element determines the flow and the beginning of injection?

A	The fuel pump
B	The electronic control unit
C	The high pressure pump
D	Injectors

14. The function of a diesel injector is to:

A	Mix the fuel and air
B	Ignite the air – fuel injector mixture
C	Provide flame front for ignition
D	Spray atomized fuel in the cylinder

15. The time of injection is the very short time which passes between the fuel exit from the:

A	Fuel tank at the entry of the fuel pump
B	Fuel pump at the entry of the injection pump
C	Injection pump exit and the beginning of injection in the cylinder
D	Injection pump at the entry of the injectors

16. One effect of detonation is:

A	Delay in ignition
B	Loss of power
C	Overheating of engine
D	Overcooling of engine

17. 250 degree of camshaft is equal to:

A	500 degree of crankshaft rotation
B	1000 degree of crankshaft rotation
C	12.5° of crankshaft rotation
D	25° of crankshaft rotation

18. The fuel used in the turbojet is:

A	Petrol
B	Gas oil
C	Kerosene
D	Fuel oil

19. Pistons are made from aluminum alloy because:

A	It is cheaper
B	Of its good conductivity property
C	Of its availability
D	It is a good heavy metal

20. The firing order of a six cylinder engine is:

A	13 42 65
B	15 36 24
C	15 24 36
D	14 26 53

21. Glow plugs are used in diesel engines for:

A	Easy startup of engine
B	Providing lights inside the combustion chamber
C	Fuel injection
D	Dry up water inside the engine

22. Which of the following combustion products not a toxic?

A	Oxides of nitrogen
B	Carbon dioxide
C	Hydrocarbon
D	Sulphur

23. Engine crankshafts are provided with counter weight to:

A	Provide mounting
B	For crankshaft
C	Support the crankshaft on the engine block
D	Prevent oil leakage

24. What part of the exhaust system cool down the exhaust gases?

A	Exhaust manifold
B	Control valve
C	Silences
D	Power valve

25. What produces carbon monoxide (CO) during combustion?

A	Incomplete combustion
B	Complete combustion
C	Un-burnt fuel
D	Fuel mixed with oil

26. During suction stroke in diesel engine the pressure inside the cylinder is:

A	Equal to atmospheric pressure
B	Above atmospheric pressure
C	Atmospheric pressure
D	Below atmospheric pressure

27. Which of the following would most likely cause black smoke from a diesel engine?

A	Cylinder misfire
B	Low cylinder compression pressure
C	Excess or irregular fuel distribution
D	Low combustion temperature

28. If the temperature of intake air in I.C. engine is lowered, then its efficiency will:

A	Increase
B	Decrease
C	Remain same
D	Increase up to certain limit and then decrease

29. Supercharging:

A	Conserves intake pressure
B	Decreases intake pressure
C	Maintains intake pressure
D	Increases intake pressure

30. Which element determines the flow and the injection beginning in a mechanical diesel injection system?

A	The gasoline filter
B	Injectors
C	The injection pump
D	The fuel pump

31. Intercooling is done to:

A	Reduce temperature of intake air
B	Increase volumetric efficiency
C	Reduce knocking
D	Increase volumetric efficiency

Turn Over

32. Fuel delivered by a pump increases with:

A	Pressure
B	Speed
C	Filter
D	Injectors

33. Compared to a naturally aspirated engine, a turbocharged engine develops;

A	A higher power, a higher engine torque and low fuel consumption
B	A higher power, a weak engine torque and a high consumption
C	A weak power, a weak engine torque and a high consumption
D	A weak power, a weak engine torque and a

34. Design of nozzle of an injector is such as to provide:

A	Ignition delay period
B	Increase power output
C	Fine spray of oil
D	Increase power output

35. During ignition delay period the:

A	Air is only admitted in the combustion chamber
B	Fuel and air is admitted
C	Fuel takes time to burn
D	Temperature of air increases

36. Which part provides automatic control of the idling to maximum speeds of a diesel engine?

A	Governor
B	Nozzle
C	Throttle
D	Injection pump

37. Which governor type functions by vacuum created by suction in the air inlet pipe of the engine?

A	mechanical
B	Pneumatic
C	Hydraulic
D	Electrical

38. The diesel injection system "common rail" is preferred than the mechanical diesel injection system because it is:

A	More precise and pollutant
B	More precise and less pollutant
C	Less precise and pollutant
D	Less precise and less pollutant

39. In a diesel fuel system equipped with an in-line injection pump, dribble from the injectors is prevented by:

A	A strong injector spring
B	Reducing the pressure at the lift pump
C	A cylindrical collar on the delivery valve
D	A sharp cut-off profile on the injection pump camshaft.

40. After fitting a new fuel filter element, the fuel system should be:

A	Completely drained down
B	Bled to remove any air that may be trapped
C	Bled by slackening the connections at the injectors
D	Put back into commission by starting the engine.

41. If petrol is used in diesel engine it will:

A	Increase power output
B	Increase tendency to knock
C	Not run
D	Loss power

42. When cycle pressure increases the output of the engine:

A	Increases
B	Decreases
C	Remain same
D	Changes the temperature

43. The three smokes commonly emitted by diesel engines are;

A	White, blue, black
B	White, black, brown
C	Black, arch, white
D	White, cream, black

44. Diesel engine pipe lines between injection pump and injectors are called:

A	Low pressure pipes
B	Weak pipes
C	High pressure pipes
D	Flexible pipes

45. Diesel fuel is injected into the combustion when:

A	The piston reaches top dead center
B	The piston reaches bottom dead center
C	In inlet valve open
D	In exhaust valve open

46. Most high speed compression engines operate on:

A	Diesel cycle
B	Otto cycle
C	Dual combustion cycle
D	Carnot cycle

47. The owner of a diesel vehicle complains of a serious vibration at idle which is caused by.

A	Misfiring valves
B	broken engine mounts
C	Cut drive chain
D	fuel filter

48. The compression ratio for practically diesel engine lies usually in the range of:

A	3-5
B	6-8
C	10-15
D	16-22

49. In electronic diesel engines, the pressurized fuel is supplied to the injectors by a pipe called:

A	The fuel pump
B	The fuel rail
C	The fuel tank
D	The fuel pipe

50. What is a likely harmful effect of engine overheating?

A	Damage to combustion chamber parts
B	Damage in the crankcase
C	Poor gas mileage
D	High tailpipe emissions

NOW GO BACK AND CHECK YOUR WORK