

CAMEROON GENERAL CERTIFICATE OF EDUCATION BOARD
Technical and Vocational Education Examination

ELECTRICAL AND ELECTRONIC SYSTEMS 1
7135

JUNE 2020

ADVANCED LEVEL

Specialty Name & Code	AUTOMOBILE CONSTRUCTION AND MAINTENANCE: LIGHT- VEHICLE (AM-LV)
Centre No. & Name	
Candidate No.	
Candidate Name	

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

7135 ELECTRICAL AND ELECTRONIC SYSTEMS1: MULTIPLE CHOICE QUESTION PAPER

1 hour 30 minutes

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.

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

Before the examination begins:

- Check that this question booklet is headed "Advance Level – 7135 ELECTRICAL AND ELECTRONIC SYSTEMS 1.
- Insert the information required in the spaces above.
- 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 erase or fold the answer sheet or make any marks on it other than those asked for in these instructions.

How to answer the questions in this examination:

- Answer **ALL** the **50** questions in this Examination. All questions carry equal marks.
- Each question has **FOUR** suggested answers: **A, B, C** and **D**. Decide 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:

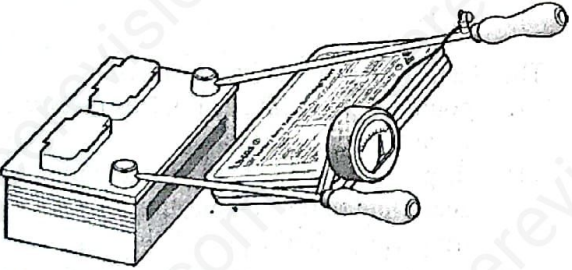
[A] [B] **[C]** [D]

- 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.
- 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.
- Do all rough work in this booklet, using, where necessary, the blank spaces in the question booklet.
- You must not take this booklet and the answer sheet out of the examination room. All question booklets and answer sheets will be collected at the end of the examination.**

Turn Over

12. If the angle between the wiper motor brushes is α , in which of the following cases will the magnetic force be maximum
- $\sin \alpha = 0$
 - $\sin \alpha$ is maximum
 - $\sin \alpha$ is 90°
 - $\sin \alpha$ is 1
-
13. Impact sensors in a car's Airbags circuit senses
- interference or stray capacitance
 - backup power
 - movement rate of the car
 - speed at which inflation takes place
-
14. A resistive cable is
- a cable made from a resistance wire
 - a cable which resist flexing
 - a cable which has resistors at each end
 - a cable composed of carbon carried upon nylon or similar material
-
15. The ability of the battery to supply a current similar to that required by the starter motor is tested by :
- A wide scaled hydrometer
 - A high rate discharge tester
 - A voltmeter scaled 0-200V
 - An ammeter scaled 0-100V
-
16. The series windings motor develops
- High speed
 - High power
 - High torque
 - Maximum torque when stationary
-
17. Two circuits of a charging system are :
- The motor circuit and control circuit
 - The input circuit and the output circuit
 - Output circuit and the field circuit
 - The field circuit and the input circuit
-
18. The unit in an electronic regulator of an alternator that prevent the flow of current until a given voltage is supplied is :
- Zener diode
 - Transistor
 - Diode
 - Condenser
-
19. Battery cables are made of heavy gauge wire because
- they must withstand engine heat
 - they must carry high electrical heat
 - they must provide a good electrical contact
 - smaller gauge wire breaks easily
-
20. A Zener diode allows reverse current flow at the point of
- Bias voltage
 - Breakdown voltage
 - System voltage
 - Forward voltage
-
21. An alternator uses diodes to
- increase voltage to the battery
 - rectify alternating current to direct current
 - allow current to flow in two directions
 - reduce current flow
-
22. Battery life can be shortened by
- sulfation caused by charging voltage that is below specification
 - excessive gassing caused by charging voltage that is above specification
 - excessive gassing caused by charging voltage that is below specification
 - frequent of headlamp
-
23. Centrifugal advance controls timing is in relation to
- engine speed
 - engine load
 - air-fuel ratio
 - ignition lag
-
24. A solenoid is used to
- cause the starter drive to engage the ring gear
 - energizes the starter motor
 - close the contacts in the starter for disengagement
 - keep the starter motor pinion in engagement for a while
-
25. All of the following are parts of a bi-polar transistor, except the
- Base
 - Emitter
 - Collector
 - Gate
-
26. The electronic speedometer operates by
- counting the number of pulses received from the speed sensor
 - displaying segments to display numerals according to the vehicle speed
 - triggering sample gates
 - treating signal pulses that originate from the ignition system

Turn over

27. A vehicle horn tone disc vibrates by
 A electrostatics
 B electroplating
 C electrocuting
 D electromagnetism
28. When jump starting, the last connection should be
 A A positive post of a dead battery
 B The engine block of the dead battery
 C The alternator disconnected on both vehicles
 D The spark plugs
29. A starter motor draws 150amp at 10V, so it consumed
 A 15w
 B 1500w
 C 150w
 D 15000w
30. The steering wheel horn switch on a horn relay circuit provides
 A electrical power to the horn
 B the ground circuit for the horn
 C the horn relay coil grounds
 D power to the horn relay
31. An ohmmeter bulb tested reads zero ohm, which signifies
 A the bulb is good
 B the bulb has normal resistance
 C the filament is shorted
 D the ohmmeter is faulty.
32. Instead of passing through a cable the current returns to the battery through the chassis or body, this arrangement is known as
 A earth coupling
 B earth connection
 C earth return
 D earth current
33. What test is being performed on the battery as shown on the diagram?

 A High rate discharge test
 B Voltage discharge test
 C Current test
 D Battery resistance
34. A one-way clutch in a pre-engaged starter motor
 A prevents the engine from driving the motor
 B prevents the motor from driving the engine
 C stops the motor when the engine starts
 D starts the motor to start the engine
35. An inductive pulse generator will NOT produce an output voltage when the engine is
 A running
 B cranking
 C stopped
 D over running
36. In a conventional incandescent bulb the filament is made from
 A Halogen
 B Tungsten
 C Quartz
 D Non resistive wire
37. When a wire or conductor cuts across a magnetic field in a closed loop
 A light is created
 B voltage is created in the wire
 C voltage and current are reduced
 D voltage is distributed in the system
38. The stator windings in an alternator are connected in either arrangement
 A A/C and Y-type
 B X-type and Delta-type
 C Delta and k-type
 D Delta and A/C type
39. The collapse of the magnetic field inside the ignition coil happens as a result of the interruption of current to the
 A primary windings
 B secondary windings
 C ignition control module
 D electronic control module
40. Correct headlamp beam alignment is necessary because
 A it is a legal requirement
 B it ensures stability of the vehicle
 C it allows good visibility from incoming vehicle
 D it ensures different beam setting
41. The component which prevents changes in the system voltage affecting a gauge reading is called a
 A moving iron resistor
 B variable resistor
 C current regulator
 D voltage regulator

42. The task of an ABS control module is to compare signals from wheel speed sensors by determining the
- A speed
 - B deceleration
 - C linear speed
 - D percentage slip
-
43. The core of a transformer coil is constructed from laminated iron to
- A increase eddy current
 - B reduce power losses
 - C reduce purchasing power
 - D increase the number of turns
-
44. Impedance restricts
- A current flow
 - B voltage flow
 - C capacitance flow
 - D resistance flow
-
45. The device that causes the windscreen blades to go to rest when switched off is called
- A main switch
 - B motor switch
 - C limit switch
 - D upper rest switch
-
46. An OR logic gate is applied in
- A headlamp wiring
 - B windscreen wiper wiring
 - C starter motor wiring
 - D ignition wiring
-
47. High speed cut-off in a coil ignition system occurs when the
- A spark output is not sufficient due to high engine speed
 - B spark output is excessive due to high engine speed
 - C ignition period has delayed
 - D rotor arm is too fast to distribute the spark
-
48. If a circuit is tested and the result is an open circuit, it means the
- A resistance is zero
 - B voltage is zero
 - C power is zero
 - D reluctance is zero
-
49. Two types of headlamp reflectors are
- A parabolic and parallel
 - B bifocal and polyfocal
 - C tryfocal and bifocal
 - D homifocal and bifocal
-
50. Thermistors are used as temperature sensors because
- A their resistance changes with temperature
 - B their resistance are constant when temperatures are too high
 - C the resistance varies with time
 - D the resistance depends on the type of engine
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GO BACK AND CHECK YOUR WORK

Turn over