

**MECHANIC MOTOR VEHICAL  
(PRACTICAL)  
2<sup>nd</sup> YEAR (ANNUAL EXAMINATION) TWO YEAR TRADE**

**TIME: 8 HRS.****MARKS: 250****Note: - Attempt all questions.**

1. Inspect, Test and Suggest any three of following engine electrical devices condition: - (80)
  - a) Oxygen sensor
  - b) MAP sensor
  - c) TP sensor
  - d) Engine coolant temperature sensor
  
2. Remove wheel from the vehicle. Remove and dismantle the disc brake assembly from the vehicle. Inspect the components and Replace it on the vehicle. Bleed the brake system and start the engine and run to check its proper function. (120)
  
3. The head lights of a given vehicle is not working. Check and Inspect the Head light circuit, Relay switches and Bulb and replace the non working components. After replacement, check the circuit for its performance. (50)

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**DRAUGHTSMAN CIVIL  
(PRACTICAL)  
2<sup>nd</sup> YEAR (ANNUAL EXAMINATION) TWO YEAR TRADE**

**TIME: 8 HRS.****MARKS: 250****Note: Attempt all questions.**

1. Draw the layout of a canal head works (use AutoCAD software). (60)
2. Draw a typical earth dam with core (use AutoCAD software) (70)
3. Draw plan, elevation and section of a single room building having room size 5.00m X 3.60 m with flat roof and also prepare the detailed estimate for the building (Quantity only) (110)
4. Viva – Voce. (10)

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**REFRIGERATION AND AIRCONDITIONING TECHNICIAN/MECHANIC**  
**REFRIGERATION AND AIRCONDITIONING**  
**(PRACTICAL)**  
**2<sup>nd</sup> YEAR (ANNUAL EXAMINATION) TWO YEAR TRADE**

**TIME: 8 HRS.****MARKS: 250****Note: - Attempt all questions.**

1. Perform de-scaling in water cooled condenser. Perform rinsing, Write tools and equipment needed to perform the job. Also write the steps involved. **(100)**
2. Remove heads of the water cooled condenser and cut gasket for the heads. **(80)**
3. Assemble the heads with new gaskets and check the performance. **(60)**
4. Viva-voce. **(10)**

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21/B/C/A-2/2/E

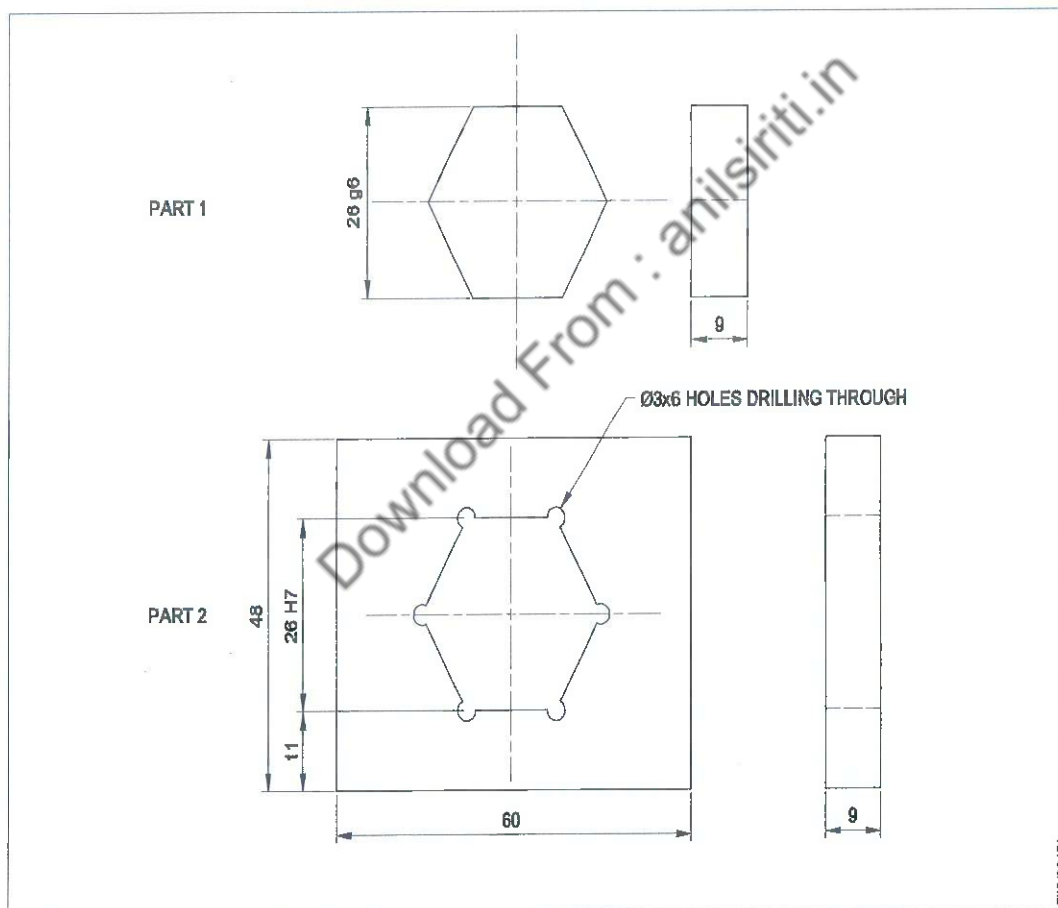
**FITTER  
(PRACTICAL)  
2<sup>nd</sup> YEAR (ANNUAL EXAMINATION) TWO YEAR TRADE**

TIME: 8 HRS.

MARKS: 250

Note: - Attempt all questions.

1. List out tools and equipments required to perform practical. (5)
2. Write down the sequence of operation to perform the practical along with safety precautions (10)
3. Make the job as per drawing. (225)



(Note: All dimensions are in "mm")  
(General tolerance  $\pm 0.02$  mm)  
(File Part 1, Part 2 and Assemble)

4. Viva-Voce.

(10)

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21/B/C/A-2/2/E

**WIREMAN  
(PRACTICAL)  
2<sup>nd</sup> YEAR (ANNUAL EXAMINATION) TWO YEAR TRADE**

**TIME: 8 HRS.****MARKS: 250****Note: - Attempt all questions.**

1. Check the continuity and measure IR value of DC compound generator. (50)
  - a) Draw the circuit diagram to check the continuity and measure IR value of DC compound generator.
  - b) Estimate the quantity of tools, instrument and materials required with specification.
  - c) Write the procedural steps along with safety to check the continuity and IR value.
  - d) Check the continuity and measure IR value of DC compound generator and record the results.
  
2. Connect, start, run and reverse single phase capacitor start induction run motor through push button starter. (100)
  - a) Draw the circuit diagram using BIS symbol to connect, start, run and reverse single phase capacitor start induction run motor.
  - b) Estimate the quantity of tools, instruments and materials required with specification.
  - c) Write the procedural steps along with safety to connect, start, run and reverse single phase capacitor start induction run motor.
  - d) Connect the circuit and start, run and reverse single phase capacitor start induction run motor through push button starter.
  
3. Efficiency of 1 phase transformer. (100)
  - a) Draw the circuit diagram using BIS symbol to measure the efficiency of 1 phase transformer under load condition.
  - b) Estimate the quantity of tools, instruments and materials required with specification.
  - c) Write the procedural steps along with safety to measure the efficiency of 1 phase transformer.
  - d) Connect the circuit and measure the efficiency of 1 phase transformer at various load and power factor.

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**ELECTRICIAN  
(PRACTICAL)  
2<sup>nd</sup> YEAR (ANNUAL EXAMINATION) TWO YEAR TRADE**

**TIME: 8 HRS.****MARKS: 250****Note: - Attempt all questions.**

1. Start, run and reverse direction of rotation of DC shunt motor. **(50)**
  - a) Draw the circuit diagram to run and reverse direction of rotation of DC shunt motor.
  - b) Write the required tools, instruments, materials with specification and procedure steps to perform the above task.
  - c) Start, run and reverse direction of rotation of DC shunt motor.
  
2. Connect, start and run three phase induction motors by manual star delta starter. **(100)**
  - a) Draw the circuit diagram to connect three phase induction motors by using manual star delta starter.
  - b) Write the required tools, accessories, materials with specification and sequence steps with safety measures for performing the above task.
  - c) Wire up the control circuit, connect manual star delta starter to motor, start and run three phase induction motor.
  
3. Test for continuity and insulation resistance of alternator. **(100)**
  - a) Draw the circuit diagram of testing continuity and insulation resistance of alternator.
  - b) Write the required tools, instruments and consumable materials with specification and sequence procedure steps to test for continuity and insulation resistance of alternator.
  - c) Test for continuity and insulation resistance of alternator.

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**ELECTRONIC MECHANIC  
(PRACTICAL)  
2<sup>nd</sup> YEAR (ANNUAL EXAMINATION) TWO YEAR TRADE**

TIME: 8 HRS.

MARKS: 250

**Note: - Attempt all questions.**

1. Prepare the cross-over network cable using CAT6 cable to connect two computers in network. (50)

Wire colour Chart for cross-over cable

Pin No.	Cable end-A Wire colour	Cable end-B Wire colour
1	white-green	white-orange
2	green	orange
3	white-orange	white-green
4	blue	white-brown
5	white-blue	brown
6	orange	green
7	white-brown	blue
8	brown	white-blue

2. Rectify the faulty in the given SMPS and check its performance. (100)
3. Identify the port pins of the microcontroller and configure the ports for input & output operation. (100)

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