Vocational Practical Question Bank

First & Second Year

Automobile Engineering Technician

Course Code : 309

State Institute of Vocational Education

O/o the Commissioner of Intermediate Education

Andhra Pradesh, Hyderabad

&

Board of Intermediate Education,

Andhra Pradesh, Hyderabad

First Year

AUTOMOBILE ENGINEERING TECHNICIAN

First Year (P.C. 309/21)

Subject : Workshop Practice

Paper - I

Time : 3 Hours **Max. Marks : 50**

Fitting

1. Prepare female V-shape from a given 5 mm thick M.S. Flat.
   (a) Measuring and marking as per given dimensions.
   (b) Fixing the Job in the work holding device.
   (c) Carrying out the operations with suitable tools.
   (d) Checking the dimensions of the finished Job with suitable tools.
2. Prepare L-Shape from a given 5 mm thick M.S Flat.
   (a) Measuring and marking as per given dimensions.
   (b) Fixing the Job in the work holding device.
   (c) Carrying out the operations with suitable tools.
   (d) Checking the dimension of the finished Job with suitable tools.
3. Prepare T. Shape from a given 5 mm thick M.S Flat.
   (a) Measuring and marking as per given dimensions.
   (b) Fixing the Job in the work holding device.
   (c) Carrying out the operations with suitable tools.
   (d) Checking the dimension of the finished Job with suitable tools.

Tinsmithy / Sheet Metal work

4. Prepare a rectangular try from a given G.I Sheet of suitable dimensions.
   (a) Measuring and marking the job as per give dimension with suitable tools.
   (b) Cut the Job as per marking with suitable tools.
   (c) Hem and seam the Job with suitable tools.

(d) Check the dimension of finished Job with suitable tool.

5. Prepare a hallow cylinder from a given G.I Sheet of suitable size.

   (a) Measuring and marking the job as per give dimension with suitable tools.

   (b) Cut the Job as per marking with suitable tools.

   (c) Hem and seam the Job with suitable tools.

   (d) Check the dimension of finished Job with suitable tool.

6. Prepare a Dust pan from a given G.I Sheet.

   (a) Measuring and marking the job as per give dimension with suitable tools.

   (b) Cut the Job as per marking with suitable tools.

   (c) Hem and seam the Job with suitable tools.

   (d) Check the dimension of finished Job with suitable tool.

7. Join the two given G.I Sheet pieces by the rivet method.

   (a) Measuring and marking the job as per given dimension with suitable tools.

   (b) Alignment and punching holes.

   (c) Keeping the raw rivets in position and pressing the rivets.

   (d) Checking the finished job.

8. Join the two given G.I Sheets by soldering method.

   (a) Measuring and marking the job as per given dimension with suitable tools.

   (b) Preparations the edges.

   (c) Soldering edges

   (d) Checking the finished job

9. Prepare a T-Lap joint a (carpentry) from a given wooden pieces of suitable dimensions.

   (a) Measuring and Marking as per given dimensions.

(b) Fixing the job in the suitable work holding device.

(c) Carrying out the different operations with suitable tools.

(d) Checking the dimensions of the finished job with suitable tools.

10. Prepare a plain Tenon joint from the given wooden pieces of suitable dimensions.

(a) Measuring and Marking as per given dimensions.

(b) Fixing the job in the suitable work holding device.

(c) Carrying out the different operations with suitable tools.

(d) Checking the dimensions of the finished job with suitable tools.

11. Perform the boring operation on a given wooden pieces of suitable drill size.

(a) Measuring and Marking as per given dimensions.

(b) Fixing the job in the suitable work holding device.

(c) Carrying out the different operations with suitable tools.

(d) Checking the dimension of the finished job with suitable tools.

12. Prepare a ring from a given round M.S rod of suitable dimensions by black smithy.

(a) Holding the job with suitable tools.

(b) Heating the job upto plastic state.

(c) Bending the job in the suitable tools.

(d) Checking the Job.

13. Prepare a Crank hook from a given M.S rod by black smithy.

(a) Holding the job with suitable tools.

(b) Heating the job upto plastic state.

(c) Bending the job in the suitable tools.

(d) Checking the Job.

14. Prepare a S-hook from a given M.S round rod by black smithy.

a) Holding the job with suitable tools.

(b) Heating the job upto plastic state.

(c) Bending the job with suitable tools.

(d) Checking the Job.

15. Prepare a flat Chisel from a given M.S rod by black smithy.

(a) Holding the job with suitable tools.

(b) Heating the job upto plastic state.

(c) Bending the job with suitable tools.

(d) Checking the Job.

16. Prepare a square butt joint from a given M.S flat pieces of suitable dimensions by arc welding method.

(a) Select the suitable arc welding equipment / tools

(b) Checking and connecting power cables.

(c) Prepare the edges of M.S Flat pieces for welding.

(d) Carrying out welding operations.

17. Prepare a lap joint from a given M.S Flat pieces.

(a) Select the suitable arc welding equipment / tools

(b) Checking and connecting power cables.

(c) Prepare the edges of M.S Flat pieces for welding.

(d) Carrying out welding operations.

18. Prepare a T. Joint from a given M.S Flat pieces.

(a) Select the suitable arc welding equipment / tools

(b) Checking and connecting power cables.

(c) Prepare the edges of M.S Flat pieces for welding.

(d) Carrying out welding operations.

Record	5 Marks
Viva	5 Marks

AUTOMOBILE ENGINEERING TECHNICIAN

First Year

MODEL QUESTION PAPER

Subject : Workshop Practice

Paper - I

Time : 3 hours **Max. Marks : 50**

Answer Any one of the following

Section - I

1 x 40 = 40 marks

16. Prepare a square butt joint from a given M.S flat pieces of suitable dimensions by arc welding method.

(a) Select the suitable arc welding equipment / tools

(b) Checking and connecting power cables.

(c) Prepare the edges for welding.

(d) Carrying out welding operations

Section - II

Record	**5 Marks**
Viva	**5 Marks**

Note : The Serial numbers of the questions mentioned above are the serial numbers in question bank. In practical examiantion only the serial number of the questions will be given, the examiner shall decode it with question bank and give the questions.

AUTOMOBILE ENGINEERING TECHNICIAN

First Year

PRACTICAL SCHEME OF VALUATION

Subject : Workshop Practice

Paper - I

Time : 3 hours **Max. Marks : 50**

Section - I **(1 x 10 = 10 Marks)**

(i) Work done for each sub question	:	7 Marks
(ii) Procedure writing for each sub question	:	3 Marks

Section II

Record	:	5 Marks
Viva Voce	:	5 Marks

AUTOMOBILE ENGINEERING TECHNICIAN

First Year (P.C. 309/22)

Subject : Engineering Drawing & Autocad Paper - II

Time : 3 Hours **Max. Marks : 50**

SECTION - I

1.Write following letters in single stoke vertical capital letters of 5 mm size. "Engineering Drawing"

2.Write following letters in single stoke vertical capital letters of 5 mm size. "Automobile Engineering Technician"

3.Write following letters in single stoke vertical capital letters of 5 mm size. "Government College"

4. Write following letters in single stoke vertical capital letters of 5 mm size. "Engineering Student"

5. Bisect the given straight line.

6. Bisect the given Angle.

7. Divide the given straight line into seven equal parts.

8. Trisect the given Angle.

9. Construct a regular heptagon.

10. Construct a pentagon circle method.

11. Draw an ellipse by concentric circle method.

12. Construct a Parabola given the base and axis.

13. Draw the isometric view of a circle of a given diameter around a given point.

14. Draw the isometric view of cylinder.

15. Draw the isometric view of a cone, base 40 mm diameter and axis 55 mm long – when its axis is vertical.

16. A Hexagonal prism has a face on the H.P and the axis parallel

to the V.P it is cut by a vertical sectional plane, the H.T of which makes an angle 45^0 with XY and which cuts the axis at a point 20 mm from one of its ends. Draw its sectional front view and true shape of the section side of base 25 mm long' height 65mm.

17. A Pentagonal, base 30mm side and axis 65 mm of the base parallel to the V.P. A horizontal section place cuts it at a distance of 35 mm alone the base. Draw its front view and the sectional top view.
18. Draw a title block. Use layer, rectangle, explode text and copy commands.

SECTION - II

1. Draw the front view, side view and top view of the given object, in third angle projection.
2. Draw the front view, side view and top view of the given object, in third angle projection.
3. Draw the front view, side view and top view of the given object, in third angle projection.
4. Draw the front view, side view and top view of the given object, in third angle projection.
5. Draw the front view, side view and top view of the given object, in third angle projection.
6. Draw the front view, side view and top view of the given object, in third angle projection.
7. A point 'A' is a 25mm above the H.P and 30 mm in front of the V.P draw its projections.
8. A point 'A' is 20 mm below H.P and lies in the third quadrant. It's shortest distance from XY is 40 mm. Draw its projection.
9. A line PQ, 90 mm long, is in the H.P and makes an angle of 30^0 with the V.P. Its end point P is 25 mm in front of the V.P. Draw its projection.
10. A square ABCD of 50 mm side has its corner A in the H.P. It's diagonal AC inclined at 30^0 to H.P. and the diagonal B.D inclined at 45^0 to the V.P and parallel to H.P. Draws its projections.

Section III

Record 5 Marks

AUTOMOBILE ENGINEERING TECHNICIAN

First Year

MODEL QUESTION PAPER

Subject : Engineering Drawing & Autocad

Paper - II

Time : 3 hours **Max. Marks : 50**

Section – I **5 x 5 = 25 Marks**

3. Write following letters in single stoke vertical capital letters of 5 mm size. "Government College"

7. Divide the given straight line into seven equal parts.

16. A Hexagonal prism has a face on the H.P and the axis parallel to the V.P it is cut by a vertical sectional plane, the H.T of which makes an angle 45^0 with XY and which cuts the axis at a point 20 mm from one of its ends. Draw its sectional front view and true shape of the section side of base 25 mm long' height 65mm.

17. A Pentagonal, base 30mm side and axis 65 mm of the base parallel to the V.P. A horizontal section place cuts it at a distance of 35 mm alone the base. Draw its front view and the sectional top view.

18. Draw a title block. Use layer, rectangle, explode text and copy commands.

Section - II **1 x 20 = 20 Marks**

2. Draw the front view, side view and top view of the given object, in third angle projection.

Section C

Record **5 Marks**

Note : The Serial numbers of the questions mentioned above are the serial numbers in question bank. In practical examiantion only the serial number of the questions will be given, the examiner shall decode it with question bank and give the questions.

AUTOMOBILE ENGINEERING TECHNICIAN

First Year

PRACTICAL SCHEME OF VALUATION

Subject : Engineering Drawing & Autocad

Paper - II

Time : 3 hours **Max. Marks : 50**

Section - I **(5 x 5 = 25 Marks)**

(i) Drawing : 3 Marks

(ii) Usage of instrument / Description : 2 Marks

Section - II **(3 x 6 = 18 Marks)**

Answer any one question (Draw all the three views of orthographic projection and each view carries 6 marks).

(i) Drawing : 3 Marks

(ii) Usage of instrument / Description : 2 Marks

(iii) Result : 1 Mark

Section - III **Neatness** **(2 Marks)**

Section IV

Record (Drawn Sheets) : 5 Marks

AUTOMOBILE ENGINEERING TECHNICIAN

First Year (P.C. 309/23)

Subject : Automobile Engine Lab

Paper - III

Time : 3 Hours **Max. Marks : 50**

1. Perform the following task on the given 2 stroke petrol engine.
   (a) Dismantle with required tools.
   (b) Clean and Identify the different components, bearings and gaskets with suitable gauges.
   (c) Inspect the components for wear and tear.
   (d) Assemble the components with the required tools.
2. Perform the following task on the given 4 stroke petrol engine
   (a) Dismantle with required tools
   (b) Clean identify the different components, bearings and Gaskets.
   (c) Inspect the components with suitable gauges for wear and tears.
   (d) Assemble the components with required tools.
3. Perform the following task on the given mechanical fuel pump.
   (a) Dismantle with required tools.
   (b) Clean and identify the different components and filter.
   (c) Inspect the components for wear and tear with suitable gauges.
   (d) Assemble the components with suitable tools.
4. Perform the following task on the given electrical fuel pump.
   (a) Dismantle with suitable tools
   (b) Clean and identify the different components and filter.
   (c) Inspect the components for wear and tear with suitable gauges.
   (d) Assemble the components with suitable tools.
5. Perform the following task on the given Solex carburetor.
   (a) Dismantle with suitable tools.

(b) Clean and identify the different components.

(c) Inspect the components / Jets for blockages wear and tear with suitable gauges.

(d) Assemble the components with suitable tools.

6. Perform the following task on the given carter carburetor.

(a) Dismantle with suitable tools.

(b) Clean and identify the different components.

(c) Inspect the components / jets/ for blockages, wear and tear with suitable gauges.

(d) Assemble the components with suitable tools.

7. Perform the following task on the given S.U Carburetor.

(a) Dismantle with suitable tools.

(b) Clean and identify the different components.

(c) Inspect the component/jets/for blockage/wear and tear with suitable gauges.

(d) Assemble the components with suitable tools.

8. Perform the following task on the given 4 stroke diesel engine

(a) Dismantle with suitable tools.

(b) Clean and identify the different components.

(c) Inspect the components for wear and tear with suitable gauges.

(d) Assemble the components with suitable tools.

9. Perform the following tasks on the given diesel engine cylinder block and head.

(a) Dismantle with suitable tools.

(b) Clean and identify the different types of combustion chambers.

(c) Observe the variations in different types of combustion chambers.

(d) Assemble the components of respective engine.

10. Perform the following task on the given Diesel fuel feed pump.

    (a) Dismantle with suitable tools.

    (b) Clean and identify the different components .

    (c) Inspect the components for wear and tear with suitable gauges.

    (d) Assemble the components with suitable tools.

11. Perform the following task on the given air cooled engine.

    (a) Dismantle cylinder, cylinder head and values.

    (b) Clean and identify the fins arrangement.

    (c) Inspect the fins for damage (or) blockage .

    (d) Assemble the components.

12. Perform the following task on the given radiator of the engine cooling system.

    (a) Dis-connect and dismount the radiator from the engine .

    (b) Clean and identify the different components.

    (c) Inspect the components for damages, leaks and blockages.

    (d) Mount and connect the radiator to the engine.

13. Perform the following task on the given water pump of the engine cooling system .

    (a) Dismantle from the engine and required tools.

    (b) Clean and identify the different components.

    (c) Inspect the components with suitable gauges.

    (d) Assemble the components of the pump and connect to the engine with required tools.

14. Perform the following task on the given wax type thermostat of a engine cooling system.

    (a) Disconnect from the cooling system and dismantle the thermostat with suitable tools.

    (b) Clean and identify the different components.

    (c) Inspect the components with suitable gauges for wear and tear.

(d) Assemble the components of the wax thermostat and connect to the cooling system with suitable tools.

15. Perform the following task on the given bellow type thermostat of a engine cooling system.

(a) Disconnect from the cooling system and dismantle the thermostat with suitable tools.

(b) Clean and identify the different components.

(c) Inspect the components with suitable gauges for wear and tear.

(d) Assemble the components of the thermostat and connect to the cooling system with suitable tools.

16. Perform the following task on the splash lubrication system of a given 4 stroke petrol engine.

(a) Dismantle the splash lubrication system components from the given engine.

(b) Identify the components and lubricating oil type and quantity.

(c) Inspect the components and check the quality of lubricating oil.

(d) Assemble the components of splash lubrication to the engine.

17. Perform the following task on the given forced feed lubrication system of a given 4 stroke engine.

(a) Disconnect the components of the forced feed system from the engine.

(b) Clean and identify the components and dismantle the oil pump and pressure relief value (P.R.V)

(c) Inspect the oil pump and P.R.V components for wear and tear with suitable gauges and assemble. Inspect the filters, pressure gauge and oil gallery.

(d) Assemble the components of the forced feed system to the engine.

18. Perform the following task on the inlet and exhaust manifold of the given engines.

(a) Dis-connect the inlet and exhaust manifold from the engine.

(b) Clean and identify the parts and compare the variations of different designs of manifolds.

(c) Inspect the components for damages, chocking with carbon.

(d) Assemble the manifolds to the engine.

19. Perform the following task on the given different types of mufflers.

(a) Dismantle the mufflers

(b) Identify the components of different types of mufflers.

(c) Inspect the parts of the mufflers for damages and clean the carbon deposits .

(d) Assemble the mufflers.

20. Perform the following task of the valve operating mechanism of the given engine.

(a) Dismantle the components of valve operating mechanism.

(b) Clean and identify the components.

(c) Inspect the components for wear and tear with suitable gauges.

(d) Assemble the components.

AUTOMOBILE ENGINEERING TECHNICIAN

First Year (P.C. 309/23)

MODEL QUESTION PAPER

Subject : Automobile Engine Lab

Paper - III

Time : 3 hours **Max. Marks : 50**

(1 x 40 = 40 Marks)

19. Perform the following task on the given different types of mufflers.

(a) Dismantle the mufflers

(b) Identify the components of different types of mufflers.

(c) Inspect the parts of the mufflers for damages and clean the carbon deposits .

(d) Assemble the mufflers.

Record	:	5 Marks
Viva	:	5 Marks

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AUTOMOBILE ENGINEERING TECHNICIAN

First Year

PRACTICAL SCHEME OF VALUATION

Subject : Automobile Engine Lab

Paper - III

Time : 3 hours **Max. Marks : 50**

Section - I **(4 x 10 = 40 Marks)**

(i) Work done for each sub question	:	7 Marks
(ii) Procedure writing for each sub question	:	3 Marks

Section II

Record	:	5 Marks
Viva Voce	:	5 Marks