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15162

3 Hours / 100 Marks

Seat No.

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**Instructions :** (1) All Questions are *compulsory*.

(2) Answer each next main Question on a new page.

(3) Illustrate your answers with neat sketches wherever necessary.

(4) Figures to the right indicate full marks.

(5) Assume suitable data, if necessary.

**Marks**

**1. (A) Attempt any THREE of the following :**

**12**

(a) State general safety precautions and procedures while using

(i) Electrical equipments

(ii) Measuring tools

(b) State functions of

(i) Feeler gauge

(ii) Head-light Aligner

(iii) Engine Analyzer

(iv) Honning Machine

(c) What is meant by maintenance ? State types of maintenance.

(d) Write procedure of engine compression test.

**(B) Attempt any ONE of the following :**

**6**

(a) Draw a layout of road-side garage attending general repairs and list tools and equipments required.

(b) Prepare a general maintenance schedule on kilometers travelled basis for light motor vehicle.

**P.T.O.**

**2. Attempt any FOUR of the following : 16**

- (a) State four factors to be considered for deciding whether to repair or replace the component.
- (b) What is 'Activity File' ? State its importance.
- (c) State four generally observed troubles related to engine cooling system.
- (d) Describe how to check engine oil level and oil condition.
- (e) Write four most probable causes and suitable remedies for the trouble – 'Engine does not start'.
- (f) Write procedure for checking and servicing of piston and piston rings.

**3. Attempt any FOUR of the following : 16**

- (a) Give procedure for carburetor tune-up.
- (b) Explain phasing and calibration of FIP.
- (c) 'Excessive oil consumption' is observed during running a vehicle, what will be probable causes ? Write suitable remedies for them.
- (d) Describe the procedure for pressure testing in cooling system.
- (e) Describe servicing of CRDI injector.

**4. (A) Attempt any THREE of the following : 12**

- (a) Write diagnosis of fault – "Engine emits excessive black smoke".
- (b) Describe how to check and adjust cooling fan belt tension.
- (c) Describe how injector pressure is tested.
- (d) Describe the procedure for clutch free play adjustment.

**(B) Attempt any ONE of the following : 6**

- (a) Describe procedure of engine tune-up.
- (b) Describe procedure for frame repair.

**5. Attempt any FOUR of the following : 16**

- (a) What is meant by bearing preload ? State the procedure to keep bearing preload in final drive.
- (b) Describe checking of synchromesh unit.
- (c) Write causes and remedies for symptom – “clutch slip”.
- (d) What will be the causes for “Hard gear shifting” ? Suggest suitable remedies.
- (e) Explain how will you check – (i) Backlash in differential gears (ii) Tooth contact between ring gear and pinion.
- (f) Write procedure for removal of dent.

**6. Attempt any FOUR of the following : 16**

- (a) Describe inspection of brake disc and brake pads.
  - (b) Write procedure of manual brake bleeding.
  - (c) What is meant by ‘spongy brake pedal’ ? Write causes and remedies for it.
  - (d) What will be the causes if vehicle pulls to one side ?
  - (e) Give procedure of wheel alignment using wheel alignment gauges.
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