

12172

21314

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) Figures to the right indicate full marks.
(4) Assume suitable data, if necessary.
(5) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. a) **Attempt any THREE of the following :** **12**
- i) State the importance of vehicle testing.
 - ii) State the vehicle level performance parameters driveability and gradiability.
 - iii) State the effects of change in steering geometry.
 - iv) State the wet compression test procedure of an engine.
- b) **Attempt any ONE of the following :** **6**
- i) Explain the use, capability and parameters of stroboscope.
 - ii) Explain the inverted vehicle drop test with neat sketch.

P.T.O.

2. Attempt any **FOUR** of the following : 16
- a) Explain the regulations of ARAI.
 - b) State the causes of tyre wear pattern.
 - c) Explain with neat sketch, the torture track testing of -
 - i) Belgian pave
 - ii) Shallow water trough.
 - d) Explain the test procedure of any two engine performance parameters on rope brake dynamometer.
 - e) Write the procedure for vacuum test for pressure cap.
 - f) Describe rollover test without collision.
3. Attempt any **FOUR** of the following : 16
- a) Explain speedometer and odometer testing.
 - b) Explain the use, capabilities and parameters to be tested on chassis dynamometer.
 - c) Describe high speed performance test of tyre.
 - d) Explain the engine emission testing procedure as per engine driving cycle.
 - e) Describe Homologation procedure.
4. a) Attempt any **THREE** of the following : 12
- i) Explain the usefulness of sampling techniques in vehicle testing.
 - ii) Describe strength test to be carried out for tyre wear.
 - iii) Classify vehicle testing methods.
 - iv) How voltage drop test carried out for starter motor ?
- b) Attempt any **ONE** of the following : 6
- i) Describe frontal impact, moving barrier collision test.
 - ii) State the importance of NVH and explain the position and intensity of floor vibrations.

- 5. Attempt any FOUR of the following :** **16**
- a) State the procedure to get approval for production part.
 - b) Write endurance test procedure of corrugated track with neat sketch.
 - c) Define -
 - i) Ride
 - ii) Comfort
 - d) Describe winch pull test.
 - e) Describe steering characteristics with example.
 - f) Write the procedure of measuring lubricating oil pressure pump.
- 6. Attempt any FOUR of the following :** **16**
- a) Why endurance test is necessary for tyre wear testing ?
 - b) State the parameters to be tested by computerised engine analyser.
 - c) Describe ignition system oscilloscope test.
 - d) Describe moving barrier collision test of roof crash.
 - e) Sketch and explain pitching and bouncing movement.
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