

MODEL QUESTION PAPER

Time : 3 Hours

Max.Marks: 100

Instructions:

1. **Group A** and **Group B** questions should be answered in the Main Answer book.
2. Answer any **TEN** questions in **Group A**. Each question carries three marks.
3. Answer **ALL** questionseither **(a)** subdivision or **(b)** subdivision in **Group B**. Each question carries 14 marks.

Group – A**Marks: 10 x 3 = 30**

1. Sketch any 3 types of valve arrangements and name them.
2. Draw and explain a sub-frame.
3. Write the properties of a coolant.
4. Illustrate the principle of a clutch using a sketch.
5. State the reason for using torsion springs in clutch plates.
6. Where is a transfer gear box used? Explain its use.
7. Describe the function of a differential using a sketch.
8. Specify the purpose of using proportioning valve in a brake system.
9. Give the properties of automotive brake fluid.
10. What does the term 'steering returnability' & 'steering ratio' mean?
11. With a sketch write the purpose of a helper spring
12. Draw a stabilizer bar and specify its use
13. Write the specification of a wheel and explain it.
14. Discuss the aspect ratio given in a tyre specification
15. Sketch any 3 types of abnormal tyre wear and specify its causes

Group– B**Marks: 5 x 14 = 70**

16. a) i] Name & locate the various parts mounted on a chassis with the help of a layout. (7)
 ii] Draw the various cross sections of frames & name them. (7)
(OR)
- b) i] Using a diagram explain any type of automotive cooling system. (7)
 ii] With the help of a circuit diagram explain the ignition system. (7)
17. a) i] Explain the construction of a Cone clutch using a diagram. (7)
 ii] Sketch and explain a diaphragm spring type, single plate clutch assembly. (7)
(OR)
- b) i] Why and how is double declutching done? Explain. (7)
 ii] Explain the working of a synchromesh gearbox using a diagram. (7)

PSG POLYTECHNIC COLLEGE, COIMBATORE - 641 004**DIPLOMASEMESTER EXAMINATIONS – MODEL QUESTION PAPER**

18. a) i] Draw a constant velocity joint and explain its advantage over universal joints. (7)
ii] Compare between semi floating axle & fully floating axle. (7)
(OR)
- b) i] How is bleeding of hydraulic brake system carried out? Explain. (7)
ii] With a diagram explain the working of a fixed caliper type disc brake. (7)
19. a) i] Explain the construction of arcirculating ball type steering gear box. (7)
ii] Compare between semi integral & integral type power steering system. (7)
(OR)
- b) i] Explain an independent type, front suspension arrangement. (7)
ii] Using a layout diagram explain an Air suspension system. (7)
20. a) i] Name the parts & explain the working of a shock absorber, using a diagram. (7)
ii] Draw and explain the construction of a wire wheel. (7)
(OR)
- b) i] Using a cross sectional diagram, explain the construction of a tubeless tyre. (7)
ii] With suitable sketches explain the construction of cross ply & radial ply tyres. (7)

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