Part III — Vocational Subjects
(Engineering and Technology Area)

இயங்கு இறைவிய மொழிகள் / AUTOMECHANIC
(தமிழு மொழிய அறிவியல் மொழி / Tamil & English Versions)

Time Allowed : 3 Hours
Maximum Marks : 200

Instructions:
(1) Check the question paper for fairness of printing. If there is any lack of fairness, inform the Hall Supervisor immediately.
(2) Use Black or Blue ink to write and underline and pencil to draw diagrams.

பதில்ப - I / PART - I

Note: Answer all the questions.

I. A. இராணுவ விளைவு விளக்குறிகள் சோதனை.

Choose the correct answer:

1. செய்தி விளைவு முறை போதுகாலையிலுள்ள (TRANSMISSION) பாதுகாக்கும் விளக்குறிகளும் போதுகாக்கும்:
   (a) களையோரம்
   (b) போதுகாலைப்போன்ற வரம்பு
   (c) போதுகாலைப்போன்ற வரம்பு

Connects and disconnects the Transmission parts with Engine by using of:
(a) Clutch unit
(b) Propeller shaft
(c) Differential unit

[திருப்பாக / Turn over]
2. The parts placed between flywheel and pressure plate is:
(a) Gear box
(b) Differential unit
(c) Clutch plate

3. Which parts connected after the engine and clutch in a vehicle?
(a) Propeller shaft
(b) Gear box
(c) Steering gear box

4. Which part is used to drive the vehicle in reverse direction?
(a) Clutch unit
(b) Differential unit
(c) Gear box

5. Which parts is used to transmit the power smoothly from Gear box to Differential unit?
(a) Clutch unit
(b) Radiator
(c) Propeller shaft
6. The system used to stop the vehicle suddenly and also particular distance is:
(a) Steering System
(b) Brake System
(c) Suspension System

7. What metal used for making Brake Shoe?
(a) Alluminium Alloy
(b) Asbestos
(c) Rubber Flap

8. The system used to absorb the shock when vehicle is running on the road is:
(a) Steering System
(b) Transmission System
(c) Suspension System
9. The vehicle running on uneven road, the shock is absorbed and run the vehicle smoothly is called:
   (a) Damping
   (b) Rolling
   (c) Skitting

10. Which parts required for mechanical energy of vehicle converted to rotating energy on road is:
    (a) Wheels
    (b) Radiator
    (c) Shock absorber

11. Which one of the following is steering gear box type?
    (a) Worm and worm wheel
    (b) Sliding mesh gear box
    (c) Constant mesh gear box

12. Which parts is consists of positive and negative terminal?
    (a) Electric Cell
    (b) Separator
    (c) Vent plug
13. Name the instrument used to check the density of Electrolyte used in Battery.
(a) Electric Tester
(b) Hydrometer
(c) Voltmeter

14. Which types of connections used to connect the Field coil and Armature coil in self starting motor?
(a) Series connection method
(b) Parallel connection method
(c) Magnetic field connection method

15. What will happen if the driver drives the vehicle with tiredness
(a) Road accident
(b) Road safety
(c) (a) and (b) both
B. Answer the following questions in one or two sentences each:

16. What is the system called the engine power transmitted to the wheel through Clutch, Gear box, Universal Joint, Propeller Shaft, Differential unit and Rear axle?

17. When starting system is failed, which parts is used to start the vehicle by pushing?

18. Which types of vehicle used first designed sliding mesh gear box?

19. Which parts is used to adjust the change in length due to the vehicle run in uneven road?

20. How many Universal Joint used in a vehicle which have two short propeller shaft?

21. Which part is used to stop the vehicle movement totally?
22. மாகஞ்சனிகம் மிதிர் மிதிர்ந்திய் மிதிர்ந்து வெகுவேற்றுத் தொடர்வாக விளக்கும் பாகம் சுருக்கம்?
Which part is support to operate the Brake Shoe in Mechanical Brake System?

23. யாரும் செல்லும் மேலும் உயரும் ஆய்வுகள் தரப்படும் நோக்கங்கள் மாதிரியாக படையாததை இருப்பது என்பது?
Which gives comfortable journey when a vehicle run on rough road?

24. பாறை பக்கங்கள் அடுத்து செய்து விளங்க அளவிகளில் நேராக வரும் விளக்கம் தளத்திலுள்ள பாதிக்கு படை வருகிறது?
Name the tyre which should be kept ready to change instead of Default tyre.

25. மேல் அருகில் வடிவப்படுத்தப்பட்டு பாதியும் என்பது?
Name the part which is fitted in front axle end.

26. கொலம்பு கம்பு பிரகாசம் கொலம்பு கம்பங்கள் ஆராய்ச்சி படையாது பாதிக்கும் திட்டம் (Gear Teeth) பாதிப்புகளுக்கு பாதிக்கு பட்டார் என்பது?
Name the shaft which have outer side gear cutting in the steering gear box.

27. விளக்கத்தான்கள் உறுப்பினருக்கு ஐராட்டு குறிப்பிட்டான் அனுமானத்தை விளக்க விளக்க மிகப் பெரியதை?
Through which parts is used to escape the Hydrogen gas which is produced during the Battery charging?

28. மாகஞ்சனிகத் தொடர்வாக்கிகள் கிளாப்பிசை உறுப்பினருக்கு அநுமானம் பாதியும் என்பது?
Which part is called as a heart of electrical system used in vehicle?
29. Name the Switch which is used to ‘ON’ or ‘OFF’ the self starter motor.

30. What is the indication of yellow line drawn continuously on road?

II. Answer any ten questions in five lines each:

31. What is Transmission System? Write their categories.

32. Write the uses of Clutch Unit. Write the types of Clutch Unit.

33. What is gear ratio?

34. Write the types of propeller shaft and write the advantage of any one type.

35. Write any four advantages of Hydraulic Brake System.

36. Write the types of Suspension System.

37. What is called Tyre Rotation?
38. What is called Wheel Balance? Why it is required?

39. What is called primary cell? Give an example.

40. Write four important lights used in a vehicle.

41. What is called Generator (or) Dynamo? Who discovered it?

42. Write any two motor vehicle acts which the Driver must know and obey the act.

**PART III**

III. Answer any five questions in about one page each. Draw diagrams wherever necessary.

43. Write the types of Transmission System and explain any one type with neat sketch.

44. Tabulate the fault and its reason and how to rectify the Clutch Unit.

45. Explain the construction of sliding mesh gear box with neat sketch.

[Turn over]
46. Write the types of propeller shaft and explain any one type with neat sketch.

47. Explain construction details of wheel cylinder with neat sketch.

48. Draw the common lighting system of a vehicle and write any three requirements of light used in vehicle.

49. What is called Starting System? Draw neat sketch of Starting Switch and explain.

**PART - IV**

Answer any four questions in about two pages each. Draw diagrams wherever necessary.

50. Write types of Clutch and explain with neat sketch the construction and working of any one type of Clutch.

51. Write the types of gear box and explain with neat sketch the construction and working of any one type of gear box.
52. Write the types of master cylinder and explain construction and working of any one type of master cylinder with neat sketch.

53. Why suspension system used? Explain any two types of leaf spring suspension with neat sketch.

54. Write the types of steering gear box and explain construction and working of any one type of steering gear box with neat sketch.

55. Write the working principle of Magneto Ignition System. Explain any one of Magneto Ignition System with neat sketch.

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