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Question Paper

Duration: 120 Mins

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Student Name: _____	Roll No: _____
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1. Which type of shock absorber is easy for replacement and handling?

- A) Mechanical type B) Vane type
C) Piston type D) Telescopic type

2. Which type of spring suspension responds quickly to road shocks? |

- A) Compression spring B) Coil spring
C) Helical spring D) Transverse spring

3. Why rubber buffer is provided in the main spring of suspension system?

- A) Transfer the load equally B) Protect chassis frame from heavy jerk
C) Transfer pay load smoothly D) Provide steering control stability

4. Where the tyre pressure sensor secured in the wheel assembly?

- A) Bolted to the rim centre B) Bolted to metal valve
C) Secured in the tyre outer edges D) Secured in the wheel hub

5. Which type of shock absorber absorbs shocks with the help of friction disc and spring?

- A) Hydraulic type B) Pneumatic type
C) Mechanical type D) Electrical type

6. What causes the deffect of ?Hard steering? in the hydraulic power steering system?

- A) Improper position of drop arm B) Tie rod loose fitting
C) Improper size of tyre D) Band axle beam

7. What does the no: 14PR denotes in the tyre specification 9? x 14 - 14PR?

- A) Tyre thickness B) Bead circle dia
C) Ply rating D) Shoulder width

8. What is the use of compact spare tyres?

- A) Withstand high temperature B) Used for high altitude
C) Used for breakdown D) Withstand heavy load

9. Which advantage does not suit to wheel alignment?

- A) Minimise tyre wear B) Achieve easy torque transmission
C) Achieve self centering after turning D) Reduce driver effort

10. What is the reason of steering wheel play excess?

- A) Wornout sealing rings B) Improper pre load defective steering
C) Low oil level D) Drop in pressure

11. What is the recommended valve of combined angle in the steering system?

- A) 5 - 8 Degree B) 15 - 18 Degree
C) 12 - 15 Degree D) 9 - 10 Degree

12. How to rectify the defect of noise in hydraulic steering?

- A) Adjust the torsion bar linkage B) Replace the with new fluid
C) Fill fluid to correct level and bleed the system D) Replace the flow control valve

13. What is the average power steering gear ratio followed in general?

- A) 20% less than manual steering B) 10% more than manual steering
C) Equal to manual steering D) 40% less than manual steering

14. Which part of integral power steering reduce fluid pressure?

- A) Unloading valve B) Torsion bar
C) Rotary valve D) Flow control valve

15. Which system provided between axles and chassis frame?

- A) Suspension system B) Braking system
C) Steering system D) Cooling system

16. Why the alternate spokes are screwed to slope forward and backward towards the rim in the wire wheel?

- A) To observe braking and driving torque
- B) To provide cushioning effect
- C) To take the uneven load
- D) To distribute the load evenly

17. What causes abnormal tyre wear, tyre slip and poor steering stability?

- A) Incorrect toe - in and toe - out
- B) Front axle bend/twist
- C) Presence of air in the break fluid
- D) Malfunctioning of torsion bar

18. Which type of independent suspension system simple in construction and allow more deflection of the front wheel without effect on the steering?

- A) Strut type suspension
- B) Torsion bar suspension
- C) Conventional suspension
- D) Coil spring suspension

19. Which device in electronic power steering converts the steering torque input and its direction in to voltage signals?

- A) Temperature sensor
- B) Torque sensor
- C) Rotation sensor
- D) Hall effect sensor

20. Which type of wheel consist two separate discs are clamped together?

- A) Split wheel
- B) Disc wheel
- C) Heavy vehicle
- D) Wire wheel

21. Which type of shock absorber maintain vehicle ride at a pre - set level according to the load placed over the rear axle?

- A) Gas pressurised shock absorber
- B) Hydraulic shock absorber
- C) Mechanical shock absorber
- D) Automatic load adjustable shock absorber

22. What is the cause of 'Wheel wobbling'?

- A) King pin wornout
- B) Drop in pressure
- C) Wrong hose size
- D) Improper tyre pressure

23. What is the role of recirculating balls in the integral power steering?

- A) Provide hard steering
- B) Prevent control in event of hydraulic failure
- C) Combine high mechanical efficiency with smooth operation
- D) Affect steering stability

24. Which type of suspension spring can not transfer wheel guidance forces?

- A) Coil springs
- B) Leaf springs
- C) Helical springs
- D) Compression springs

25. Which is the heart of integral power steering system?

- A) Flow control valve
- B) Pressure relief valve
- C) Unloading valves
- D) Rotary control valve

26. How the tyre height is calculated?

- A) Thread width + Tyre width
- B) Tyre outer dia - Rim dia
- C) Tyre width + Bead circle dia
- D) Rim dia - tyre outer dia

27. Which is not the benefit of power steering?

- A) Positive breaking system
- B) Absolute control during driving
- C) Effort less steering
- D) Quick response

28. Which part of tyre referred as 'Crown'?

- A) Thread radius
- B) Rim width
- C) Tyre width
- D) Thread width

29. Which factor affecting suspension?

- A) Abnormal tyre wear
- B) Damaged chassis frame
- C) More shocks, uncomfortable riding
- D) Wornout spring

30. What is the steering linkage ratio if the pitman arm length twice of steering arm length?

- A) 02:01
- B) 02:01
- C) 01:02
- D) 02:03

31. When the driver is warned of difference in tyre pressure?

- A) Difference in pressure exceeds 30%
- B) Difference in pressure more than 10%
- C) Difference in pressure exceeds 40%
- D) Difference in pressure more than 20%

32. Which part of electronic power steering revert back to manual steering in case of failure in power steering?

- A) Phase compensator
- B) Current controller
- C) Solenoid valve
- D) Fail safe relay

33. Why vibration damper are not used inside the helical spring?

- A) Possibility of stuck in one position
- B) Not economical
- C) Fitting and removing time consuming
- D) No effect on load carrying capacity

34. What is the main cause for wear on one side of tyre?

- A) Improper caster B) Under inflation
C) Over inflation D) Improper camber

35. Why tyre wear found abnormal in the vehicle?

- A) Improper tol-in and tol - out B) Improper linkage adjustment
C) Improper tyre pressure D) Loose wheel nut

36. What is the purpose of beads and plys provided in the tyre?

- A) Resist vibration B) Provide strength to tyre
C) Prevent tyre slip D) Provide grippness on the surface

37. What is the maximum air pressure supplied by the compressor in the air suspension system?

- A) 120 to 125 PSI B) 200 to 215 PSI
C) 100 to 115 PSI D) 180 to 210 PSI

38. Where the airbags are located in the air suspension system?

- A) Between high control valve and frame B) Between air pressure regulator and front axle
C) Between brake tank and vehicle axle D) Between frame and vehicle axle

39. Why light weight cars use low steering ratio?

- A) To obtain low steering effect B) To obtain large steering effect
C) To obtain constant steering effect D) To obtain no steering effect

40. Which type of suspension spring made of fibre glass, laminated and bonded together by tough polyster resins?

- A) Coil springs B) Monoleaf springs
C) Multiple leaf springs D) Fiber composite springs

41. What is the effect of weak suspension?

- A) Vibration damping is more effective B) Carrying excessive payload of vehicle
C) Unequal weight distribution of weight D) Directional unstability of vehicle

42. What will be the effect of negative scrub radius?

- A) Wheel is caused to toe - out B) Wheel is kept in straight position
C) The tyre centre portion wear out D) Wheel is caused to toe - in

43. Which device in the air suspension system observe vibration of low amplitude and high frequency?

- A) Air bags in the system B) Shock absorber

- C) Suspension spring D) Leaf spring

44. What is the purpose of spokes provided in the wheel?

- A) Distribute pre load evenly B) Support the chassis frame of vehicle
C) Provide directional stability of vehicle D) Provide accurate rounds of rim

45. What is the advantage of using independent suspension system?

- A) Spring weight is less B) This is simple arrangement
C) Shocks are transmitted from one wheel to other D) Maintance cost is less

46. Which is not the function of suspension system?

- A) It increase steering stability B) It transfer braking torque to the chassis
C) It maintains body level D) It gives cushioning effects

47. What is the aspect ratio in the tyre structure?

- A) Percentage rartio of tyre height to Rim width B) Ratio between tyre width to Rim width
C) Ratio between tyre height to tyre dia D) Percentage ratio of tyre height to tyre width

48. What is the advantage of coil spring?

- A) Good load carrying capacity B) Low space requirement
C) High steering and stability D) Provide greater pay load

49. What is the function of Rim in the wheel construction?

- A) Holds the tyre in correct position B) Provides balancing of vehicle
C) Support the axle D) Distribute the load equally

50. What is the name of distance between most protruding portions on both sides of tyre?

- A) Tyre width B) Thread radius
C) Tyre height D) Tyre outer diameter

51. What is the advantage of using non reactive suspension arrangement on multi-axle vehicles?

- A) Increased spring life B) Good braking efficiency in both rear wheels
C) Prevention of ratting D) Better riding comfort

52. What will be effect of unequal castor in the vehicle?

- A) Vehicle will not move B) Driver have to use less effort on steering

- C) Increase steering stability D) Vehicle pull to one side wheel
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- 53.** What is the cause of ? low pressure? in the hydraulic power steering system?
- A) Wornout sealing ring B) Low oil level
C) Wrong flow control valve setting D) Air in the system
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- 54.** How the tyre is specified?
- A) Shoulder width, Tyre thickness B) Shoulder width, Boad circle dia. Ply rating
C) Shoulder dia, Bead circle dia, Ply rating D) Ply rating, tyre inner circle dia, shoulder width
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- 55.** What is the range of steering ratio available in general?
- A) 11 : 1 to 24 : 1 B) 11 : 2 to 22 : 2
C) 8 : 2 to 22 : 2 D) 10 : 1 to 18 : 1
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- 56.** What is the disadvantage of excessive positive camber in the wheel asignment?
- A) Tyre thread wear out B) Tyre centre will wearout
C) Tyre outer edge will wearout fast D) Tyre bleeding wire wear out
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- 57.** What is the disadvantage of rigid axle suspension system?
- A) Maintanance cost is more B) Vibration damping is less effective
C) Spring weight is less D) This is a complicated arrangement
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- 58.** Which angle helps in self centering of wheels after negotiating a turn?
- A) King pin inclination B) Included angle
C) Castor angle D) Camber angle
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- 59.** What will effect in case of over inflated tyres?
- A) Tyre will wear out at edges B) Tyre will crack at edges
C) Tyre will wearout at centre D) Tyre will crack at centre
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- 60.** What is the purpose of air suspension?
- A) Increase the directional stability B) Reduce the suspension weight
C) Reduce the space occupation D) Used for leveling purpose
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- 61.** Which part of coil spring allows angular movement of linkages?
- A) Ball joint B) Stabiliser bar
C) Lower control arm D) Torsion bar

- 62.** What is the purpose of castor in wheel alignment?
- A) Convert steering torque input into voltage signal B) Reduce abnormal vibration
C) Reduce tyre wear D) Maintain directional stability and control
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- 63.** What is the advantage of using run flat tyres?
- A) Eliminate head for spare tyre and jack B) Less cost and maintance
C) Resist vibration D) Provide equal distribution of load
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- 64.** What is the reason of faster wear out of tyre edges?
- A) Over inflated tyre B) Under inflated tyre
C) Defective suspension system D) Un equal load distribution
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- 65.** Which steering system will provide assistance even when the engine is not running?
- A) Integral power steering B) Linkage power steering
C) Manual steering D) Electronic power steering
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- 66.** What will be the effect of negative camber excessive in the wheel alignment?
- A) Inner edge of tyre wear out faster B) Cracks developed in the tyre tread
C) Outer edge of tyre wearout faster D) Centreof tyre wearout faster
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- 67.** What is the advantage of electronic power steering?
- A) Compact in size B) Energy being consumed only while steering
C) Number of components are less D) Less occupation of space
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- 68.** Which rating indicate the braking capabilities of the tire to the consumer?
- A) Ply rating B) Temperature rating
C) Tyre rating D) Traction rating
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- 69.** Which type of spring will have good load carrying capacity and do not have noise in the suspension system?
- A) Multiple - leaf spring B) Fibre composite springs
C) Coil spring D) Monoleaf springs
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- 70.** What is the disadvantage of independent suspension system?
- A) Spring weight is more B) Vibration damping is less effective
C) Shocks transmitted from one wheel to other D) More maintanance cost

71. What is the impact of larger scrub radius?

- A) Wear on the centre part of tyre
- B) Unequal braking on the front wheel
- C) Wear on the outer edge of tyre
- D) Bending of steering linkage point

72. What causes 'Air suction' in pump of hydraulic power steering system?

- A) High fluid level
- B) Steering wheel play
- C) Low pressure
- D) Noise

73. What is the cause of 'Poor self centering' in a vehicle?

- A) Loose wheel level
- B) Filter choked
- C) Improper wheel alignment
- D) Low oil level

74. What is the cause of noise in steering?

- A) Defective torsion bar
- B) High fluid level
- C) Presence of air in the fluid
- D) Defective flow control valve

75. What will be the result of improper brake adjustment?

- A) Hard steering
- B) Vehicle pulling to one side
- C) Steering wheel play
- D) Wheel wobbling

76. What is the advantage of using nitrogen in the tyres?

- A) Provide cushioning effect on the vehicle
- B) Provide positive road grip
- C) Observe shocks and vibration
- D) Increase the tyre life