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1. ~~In gear system, speed reduction means torque -~~
 - 1) Stabilization
 - 2) Increase
 - 3) Reduction
 - 4) Will not influence
2. **The two meshed gears have a gear ratio of 3 : 1. Every time the larger gear turns the small gear will be to turn -**
 - 1) 1/3 time
 - 2) One
 - 3) Three times
 - 4) Six times
3. **If two meshing gears have 4 : 1 gear ratio and the smaller gear has 12 teeth, the larger gear will have -**
 - 1) 12 teeth
 - 2) 24 teeth
 - 3) 36 teeth
 - 4) 48 teeth
4. **The type of rear axle in which the wheel end is supported by bearing inside the axle housing is :**
 - 1) Semi floating axle
 - 2) Three quarter floating axle
 - 3) Full floating axle
 - 4) 1/4 floating axle
5. **The axle simply remains stationary and does not move with the wheels, is called -**
 - 1) Live axle
 - 2) Dead axle
 - 3) Semi floating axle
 - 4) Full floating axle
6. **In the transmission system, the provision of slip joints allows a change in the -**
 - 1) Angle of drive
 - 2) Length of the shaft
 - 3) Speed rotation
 - 4) Diameter of the shaft
7. **Floating axles are classified on the basis of -**
 - 1) The amount of torque transmitted
 - 2) Depending upon their location whether at front or rear
 - 3) Depending upon the nature of forces like torsional vertical and lateral loading to which they are subjected
 - 4) Purely on the basis of type and number of bearings used at the work.
8. **In the Hotchkiss drive, the rear torque is absorbed by the -**
 - 1) Torque tube
 - 2) Rear springs
 - 3) Radius rod
 - 4) Universal joint
9. **Cornering force divided by slip angle is called -**
 - 1) Self righting torque
 - 2) Cornering power
 - 3) Pneumatic trail
 - 4) Camber
10. **The included angle is the sum of -**
 - 1) Camber and caster
 - 2) Caster and king pin inclination
 - 3) Camber and king pin inclination
 - 4) Camber and toe-in
11. **The two basic types of axle are -**
 - 1) Semi floating and full floating axle
 - 2) Dead and live axle
 - 3) Dead and full floating axle
 - 4) Live and full floating axle

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12. **Steering gear ratio of the passenger cars without power steering varies in between -**

- 1) 8 : 1 and 10 : 1
- 2) 14 : 1 and 24 : 1
- 3) 5 : 1 and 7 : 1
- 4) 25 : 1 and 27 : 1

13. **When the slip angle is greater than at the front, the vehicle tends to -**

- 1) Over steer
- 2) Under steer
- 3) Correct steer
- 4) Over damped

14. **The turning circle radius is proportional to -**

- 1) Wheel base of vehicle
- 2) Wheel track
- 3) Length of the tie rod
- 4) Caster and camber

15. **The slip joints permits a change in the -**

- 1) Length of the shaft
- 2) Speed of rotation
- 3) Diameter of the shaft
- 4) Torque of the shaft

16. **Articulated vehicle means -**

- 1) A tractor to which a trailer is attached
- 2) Luxurious vehicles
- 3) Off road vehicles
- 4) Light commercial vehicle

17. **Omnibus means -**

- 1) Vehicle constructed to carry more than six persons excluding driver
- 2) Vehicle constructed to carry more than six persons including driver
- 3) Vehicle constructed to carry less than six members including driver
- 4) Vehicle constructed to carry less than six members excluding driver

18. **Wheel centre is :**

- 1) Centre to centre distance between the front and rear wheels
- 2) Supporting member between the axle and the rim
- 3) Centre to centre distance between front wheels only
- 4) Wheel base

19. **Commonly used antifreeze are -**

- 1) ISO-octane and ethylene glycol
- 2) Alcohol base and ethylene glycol
- 3) Ethylene glycol and propylene glycol
- 4) Ethylene glycol alone

20. **The cooling system is designed to remove _____ of heat produced in the engine cylinder.**

- 1) 30 to 35 %
- 2) 40 to 45 %
- 3) 60 to 70 %
- 4) 10 to 20 %

21. **The unsprung mass in a vehicle system is mainly composed of -**

- 1) The frame assembly
- 2) Gear box and propeller shaft
- 3) Components between the suspension and road surfaces
- 4) Engine and associated parts

22. **Unladen weight means -**

- 1) Weight of a vehicle including all equipments
- 2) Weight of a vehicle with passengers
- 3) Weight of passengers
- 4) Weight of a vehicle without all equipments

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23. ~~1~~ member of a car frame is added for -

- 1) Providing torsional rigidity
- 2) Bending strength of side members
- 3) Resistance to vertical shock load acting simultaneously on both front wheels
- 4) Resistance of wearing and torsional strength of front end of frame

24. The rear end suspension arrangement in which rear end torque is absorbed by the spring is called the -

- 1) Torque tube drive
- 2) Hooks drive
- 3) Differential drive
- 4) Hotchkiss drive

25. All the four wheels must resist the -

- 1) Braking stresses and withstand side thrust
- 2) Load due to bump and pit
- 3) Speed of the vehicle
- 4) Weight of spring mass only

26. Braking is produced by the frictional effect between the brake drum and the -

- 1) Wheel studs
- 2) Wheel rim
- 3) Brake shoes
- 4) Wheel cylinder pistons

27. The flange of the rim which provides _____ support to the tyre.

- 1) Radial support
- 2) Lateral support
- 3) Linear support
- 4) Both radial and linear support

28. Motor car tyres usually have -

- 1) 2 Plies
- 2) 2 to 3 Plies
- 3) 4 to 6 Plies
- 4) 7 to 9 Plies

29. Side walls of a tyre may have -

- 1) White color only
- 2) Black color only
- 3) Red color and Black color
- 4) Black and white color

30. The load rating of the tyre -

- 1) Increases with the tyre width and the outer diameter
- 2) Decreases with the tyre width and the outer diameter
- 3) Increases with the tyre width only
- 4) Decreases with the tyre width only

31. The running gear includes -

- 1) Wheels
- 2) Jack
- 3) Road
- 4) Steering

32. The max load per tyre shall -

- 1) Exceed the highest load specified at the max inflation pressure for a tyre of that size and ply rating
- 2) Not exceed the highest load specified at the max inflation pressure for a tyre of that size and ply rating
- 3) Not consider for heavy vehicle
- 4) Consider for light commercial vehicle

33. A wheel constructed that the centre line of the rim is coincident with the attachment face of the metal disc is called as -

- 1) Zero set
- 2) Out side
- 3) Inset
- 4) Off set

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34. ~~No~~ take care of the difference in the driving angle as rear axle moves up and down the propeller shaft has one or more -
- 1) Slip joint
 - 2) Elbow joint
 - 3) Release joint
 - 4) Universal joint
35. Turning circle radius of the buses and trucks is :
- 1) 10 M
 - 2) 5 to 7.5 M
 - 3) 3 to 4 M
 - 4) More than 10 M
36. One purpose of recirculating ball type steer gear is to reduce the -
- 1) Operating friction
 - 2) Operating cost
 - 3) Toe in during turns
 - 4) Number of plates
37. On cars, having rack and pinion steering the gear rack is attached to -
- 1) Relay rod
 - 2) Pitman axis
 - 3) Cross shaft
 - 4) Tie rod
38. The automobile chassis consists of the engine, frame, power train, wheels steering and _____ .
- 1) The doors
 - 2) Luggage boot
 - 3) Wind shield
 - 4) Braking system
39. Critical whirling speed of the shaft is increased by -
- 1) Increasing its length
 - 2) Decreasing its length
 - 3) Decreasing its diameter
 - 4) Increasing its diameter
40. In the constant mesh transmission the counter shaft drive gear is meshed with a gear on the -
- 1) Output shaft
 - 2) Main shaft
 - 3) Clutch shaft
 - 4) Propeller shaft
41. The three forward speed and the reverse transmission consists of these shafts and -
- 1) Three gears
 - 2) Five gears
 - 3) Eight gears
 - 4) Ten gears
42. In the automobile, the power train carries the engine power from the engine to the rear wheels. The power train includes the clutch propeller shaft, differential and -
- 1) Front axle
 - 2) Steering gear
 - 3) Gear box
 - 4) Chassis
43. The device that produces different gear ratio in the power train is called -
- 1) Differential
 - 2) Transmission
 - 3) Speed changer
 - 4) Clutch
44. In the transmission reduction of speed is always used to obtain -
- 1) Reduction of torque
 - 2) Constant torque to drive the wheels
 - 3) Increase of torque
 - 4) Torque will not be considered
45. The modern passenger can has -
- 1) Two forward speeds
 - 2) Three forward speeds
 - 3) Four forward speeds
 - 4) Five forward speeds

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46. ~~Overdrive is provided in the transmission of a vehicle to -~~
- 1) Reach higher road surfaces
 - 2) Improved fuel economy
 - 3) Achieve better acceleration
 - 4) Carry more load
47. ~~The ring gear is mounted on the -~~
- 1) Differential housing
 - 2) Differential case
 - 3) Axle housing
 - 4) Driven pinion
48. ~~The axle bevel gears in the differential mesh with the -~~
- 1) Differential pinion gears
 - 2) Ring gear
 - 3) Drive pinion
 - 4) Main gear
49. ~~Whipping of the propeller shafts is mainly due to -~~
- 1) The transmission of torsional vibration of the crank shaft
 - 2) The use of sliding joint in the propeller joint
 - 3) The use of universal joints
 - 4) Lack of balance and more weight of the propeller shaft
50. ~~Axle shaft of the three quarter floating axle is subjected to -~~
- 1) Bending stress only
 - 2) Side thrust and driving torque
 - 3) Driving torque only
 - 4) Direct stress only
51. ~~Propeller shaft includes -~~
- 1) Universal joint
 - 2) Knee joint
 - 3) Slip joint
 - 4) Gear shaft
52. ~~The power train transmits power from the engine to the -~~
- 1) Crank shaft
 - 2) Rear wheels
 - 3) Front wheels
 - 4) Steering gear
53. ~~In the transmission, the reverse idler gear always mesh with -~~
- 1) Counter shaft drive gear
 - 2) Counter shaft low gear
 - 3) Main shaft reverse gear
 - 4) Counter shaft reverse gear
54. ~~In the slip joint, slippage occurs between internally and externally mated -~~
- 1) Couplings
 - 2) Joints
 - 3) Splines
 - 4) Gears
55. ~~The propeller shaft has one or more -~~
- 1) Spur gears
 - 2) Elbow gears
 - 3) Universal joints
 - 4) Fluid couplings
56. ~~Battery life of a vehicle is reduced by -~~
- 1) Over charging
 - 2) Over heating
 - 3) Atmospheric condition
 - 4) Power fluctuation
57. ~~Clutch slippage while clutch is engaged is particularly noticeable -~~
- 1) When starting the engine
 - 2) During acceleration
 - 3) During idle
 - 4) At low speed
58. ~~The purpose of the fluid coupling is to act as -~~
- 1) Synchronizing device
 - 2) Automatic gear changer
 - 3) Smoothly drive power transmission coupling
 - 4) Gear box

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59. **The synchronizing device used in the transmission uses -**
1) Cone braking surfaces
2) Flat braking surfaces
3) Synchronizing pins
4) Curved braking surfaces
60. **The function of a torque converter or fluid converter is similar to that of a -**
1) Gear box
2) Clutch
3) Shock absorber
4) Torsion box
61. **The purpose of the fluid coupling is to act as a -**
1) Automatic gear changes
2) Transmitting turning effort from the engine to the clutch
3) Synchronizing device
4) Accelerator
62. **Pressing down on clutch pedal causes the release levers to move the pressure plate away from -**
1) Clutch driven plate
2) Clutch cover
3) Pressure plate baffle
4) Throw out bearing
63. **The hose that connects the compressor to the evaporator is commonly called the -**
1) Discharge line
2) Suction line
3) Liquid line
4) Cold gas line
64. **The thermostatic expansion valve is located at the -**
1) Evaporator outlet
2) Condenser outlet
3) Evaporator inlet
4) Condenser inlet
65. **An accumulator is very similar to an -**
1) Receiver-drier
2) Evaporator
3) Condenser
4) Orifice tube
66. **Most automotive air conditioning systems cycle the compressor clutch in regular interval to control -**
1) Condenser temperature
2) Compressor pressure
3) Evaporator temperature
4) Expansion valve pressure
67. **What colour are the air bag system wire harness connectors ?**
1) White
2) Red
3) Grey
4) Yellow
68. **For accuracy, many electrical gauges depend on _____ voltage.**
1) An alternating
2) Battery
3) A regulated
4) None of these
69. **An electronic tachometer :**
1) Is gear driven by the transmission
2) Measures actual vehicle speed
3) Receives voltage pulses from the injectors
4) Receives voltage pulses from an ignition signal
70. **The firing order is the -**
1) Order in which the cylinders are numbered
2) Order in which the cylinders deliver their power strokes
3) Standard arrangement which can be changed by changing the crankshaft
4) None of these

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71. **The inlet valve in an I.C. Engine actually opens at -**
1) ~~10° After TDC~~ 2) 50° After BDC
3) ~~10° Before TDC~~ 4) 50° Before BDC
72. **To use vegetable oils as an alternative fuel for C.I. engine esterification process is required to -**
1) Increase the volatility 2) Increase the cetane number
3) ~~Reduce the viscosity~~ 4) Increase the calorific value
73. **Multi hole type nozzles are generally used in engines with -**
1) ~~Open type combustion chamber~~ 2) Pre-combustion chamber
3) Swirl chamber 4) All of these
74. **The secondary filter is installed in diesel engine fuel system -**
1) Before the feed pump 2) ~~After the feed pump~~
3) After the fuel tank 4) After the injector
75. **The disadvantage of diesel engines over spark ignition engines is :**
1) Higher weight to power ratio 2) Higher initial cost
3) Higher starting difficulties 4) ~~All of these~~
76. **Cars and Trucks have the chassis design with -**
1) Semi forward control 2) Forward control
3) ~~Full forward control~~ 4) None of these
77. **The transverse engines chassis layout the drive line is :**
1) 30° to the axle axis 2) 60° to the axle axis
3) Perpendicular to the axle axis 4) ~~Parallel to the axle axis~~
78. **As compared to rear engines rear wheel drive, front engine front wheel drive has -**
1) Less passenger space 2) Complicated engine and gear box
3) Better road grip during acceleration 4) ~~More passenger space~~
79. **Mechanical efficiency of the engine is the ratio of -**
1) Indicated power to brake power 2) Indicated power to indicated thermal efficiency
3) ~~Brake power to indicated power~~ 4) Brake power to brake thermal efficiency
80. **Four stroke engines are preferred for automotive applications due to their -**
1) High power 2) ~~High thermal efficiency~~
3) High speed 4) High torque
81. **Aluminium alloy pistons are preferred in engines due to their -**
1) ~~Good heat conductivity~~ 2) Poor heat conductivity
3) Good wear resistance 4) Good lubrication property
82. **In making engine pistons, nickel and copper are added to improve the piston's -**
1) Bearing properties 2) ~~Thermal stability~~
3) Wear resistance 4) Corrosion resistance
83. **Crank shaft main bearings are made of -**
1) Alloy steel 2) Copper alloy
3) ~~Babbit metal~~ 4) Nichrome steel

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84. Valve lash represents -

- 1) Valve tappet clearance
- 2) Valve misalignment
- 3) Worn out of valve face
- 4) Worn out of valve stem

85. The chapter according to Motor Vehicle Act 1988 dealt Registration of Motor Vehicles is :

- 1) Chapter II
- 2) Chapter IV
- 3) Chapter VI
- 4) Chapter XII

86. Heat lost due to friction in the IC engines between _____ of engine power output.

- 1) 8 to 10 %
- 2) 2 to 4 %
- 3) 15 to 20 %
- 4) 80 to 90 %

87. The fins at the top of a motor cycle engine cylinder are longer than those at the bottom because -

- 1) Hot air rises
- 2) Top is the hottest part
- 3) They are in an unexposed position
- 4) Extra strength is required at the top

88. What is the main purpose of the water-pump bypass hose in the engine cooling system ?

- 1) To reduce pressure at water-pump outlet during high engine speeds
- 2) To allow coolant flow within the engine while the thermostat is closed
- 3) To prevent air pockets in the water pump housing
- 4) To prevent collapse of the lower radiator hose

89. Which one of the following materials is NOT used as linear material in leaf springs ?

- 1) Zinc
- 2) Steel
- 3) Lead
- 4) Rubber

90. In case of rigid axle suspension, the road adhesion is :

- 1) Increased
- 2) Decreased
- 3) First increased and then decreases
- 4) First decreased and then increases

91. A battery of 100 Ah capacity will deliver a current of 400A continuously for -

- 1) 8 hours
- 2) 4 hours
- 3) 1 hours
- 4) 0.25 hours

92. The battery terminals are mostly manufactured by -

- 1) Hot forging
- 2) Cold forging
- 3) Casting
- 4) Rolling

93. Typical radiator cap pressure of a pressurised cooling system of an automobile is :

- 1) 83 - 110 kPa
- 2) 100 - 150 kPa
- 3) 150 - 163 kPa
- 4) 160 - 183 kPa

94. Water pump noise in the engine cooling system is due to -

- 1) Dry bearings and bush bearings
- 2) Loose pulley on the pump shaft
- 3) Too much end play in the shaft
- 4) All of these

95. **Evaporative cooling permits the water temperature to rise above the boiling point**

about -

- 1) 80°C to 110°C
- 2) 100°C to 115°C
- 3) 120°C to 140°C
- 4) 100°C to 150°C

96. **The water pump used for circulating coolant through the cooling system is :**

- 1) Reciprocating pump
- 2) Rotary pump
- 3) Vane pump
- 4) Centrifugal pump

97. **In a dry sump lubricating system -**

- 1) Oil is kept in the crank shaft chamber
- 2) Oil is kept in a separate tank (or) reservoir
- 3) Oil is kept above the crank shaft chamber
- 4) No oil is used

98. **Engine manufacturers generally recommend that the fitters to be replaced after -**

- 1) 10000 miles
- 2) 6000 miles
- 3) 4000 miles
- 4) 2000 miles

99. **Mixing animal fat (or) vegetable oil with lubricating oil to obtain some desirable quality is called -**

- 1) Blending
- 2) Emulsifying
- 3) Compounding
- 4) None of these

100. **The number of negative plates in comparison to positive plates in a battery is :**

- 1) More
- 2) Less
- 3) Same
- 4) None of these

101. **The size of the flywheel depends upon -**

- 1) No. of cylinders
- 2) No. of strokes
- 3) Speed of the engine
- 4) Size of the crankshaft

102. **The gasoline engines operate on -**

- 1) Diesel cycle
- 2) Otto cycle
- 3) Dual cycle
- 4) A stroke cycle

103. **Piston displacement is calculated from -**

- 1) Cylinder diameter
- 2) Cylinder diameter and length
- 3) Piston length and diameter
- 4) Bore and stroke

104. **The compression ratio in a diesel engine is as high as -**

- 1) 22 : 1
- 2) 20 : 1
- 3) 10 : 1
- 4) 8 : 1

105. **The cylinder block is usually made from -**

- 1) Steel
- 2) Alloy steel
- 3) Gray cast iron with nickel and chromium
- 4) Cast steel

106. **The power developed inside the engine cylinder is called -**

- 1) IHP
- 2) FHP
- 3) BHP
- 4) Engine capacity

107. Floating power means -

- 1) A method of engine mounting
- 2) A method of engine power generation
- 3) A method of engine power storage
- 4) A method of engine power consumption

108. To control torsional vibration of the engine due to crank shaft _____ are used.

- 1) Shock absorbers
- 2) Harmonic balancers
- 3) Cushions
- 4) Springs

109. The case with a liquid vapourises is called its -

- 1) Volatility
- 2) Octane rating
- 3) Vapourability
- 4) Radiation

110. The device that permits variation in the distance between the spring eyes of a leaf spring as the spring flexes is called -

- 1) Spring shackle
- 2) Spring U bolt
- 3) Spring hanger
- 4) Spring leaf

111. Universally used suspension spring for heavy commercial vehicles is :

- 1) Full elliptic
- 2) Semi elliptic
- 3) One quarter elliptic
- 4) Three quarter elliptic

112. Synchronizing devices are designed only on the -

- 1) 1st and 2nd gear
- 2) Top gears
- 3) First and Reverse
- 4) Reverse

113. Clutch chattering or grabbing is noticeable -

- 1) At low speed
- 2) When engaging the clutch
- 3) When acceleration
- 4) When it is not engaged properly

114. Clutch knock are usually most noticeable when the engine is :

- 1) Accelerating
- 2) Decelerating
- 3) Idling and clutch is engaged
- 4) Being started

115. The fluid coupling has maximum efficiency when driving and driven members are turning at -

- 1) High speed
- 2) Low speed
- 3) Different speed
- 4) Same speed

116. The clutch pressure plate is mounted on the -

- 1) Flywheel
- 2) Clutch cover
- 3) Friction disc
- 4) Crank shaft

117. The clutch cover is bolted on the -

- 1) Friction disc
- 2) Fly wheel
- 3) Car frame
- 4) Engine block

118. There is a double faced friction disc splined to the shaft in the -

- 1) Transmission
- 2) Differential
- 3) Engine
- 4) Clutch

119. An automatic transmission works on the principle of -

- 1) Centrifugal device making up charges proportional to road speed
- 2) Centrifugal device connected to crank shaft making up changes proportional to engine speed
- 3) Controlling the variable speed and engine load
- 4) Making gear changes at equal intervals or set road speeds

120. The hydraulic torque converter -

- 1) Gives a variable torque is impressed on the driven member without the use of clutch and gear train
- 2) Enables to get the maximum h.p continuously
- 3) Gives a speed variation without torque variation
- 4) Maintains a high efficiency throughout the operating speed angle

121. In the fluid coupling oil passes from the driving to the -

- 1) Gear
- 2) Coupling
- 3) Vanes
- 4) Driven member

122. The fluid coupling is most efficient as drive ratio approaching to -

- 1) 1 : 1
- 2) 2 : 1
- 3) 1.5 : 1
- 4) 1 : 3

123. In the high gear in the transmission, main shaft turns at the speed as the -

- 1) Idler shaft
- 2) Counter shaft
- 3) Clutch shaft
- 4) Propeller shaft

124. The over drive is located between the -

- 1) Transmission and the propeller shaft
- 2) Planetary gears and clutch
- 3) Transmission and clutch
- 4) Differential and axle

125. The sun gear in the planetary gear system meshes with the -

- 1) Pinion cage
- 2) Ring gear
- 3) Clutch gear
- 4) Planet pinions

126. The power train includes the clutch propeller shaft, differential and _____ .

- 1) Steering gear
- 2) Front axles
- 3) Chassis
- 4) Gear box

127. The axle shaft of full floating is subjected to -

- 1) Axial thrust only
- 2) Axial thrust and bending stress
- 3) Torsional stress only
- 4) Bending and torsional stresses

128. Differential mechanism at the axle is provided mainly to -

- 1) Enable the vehicle is taking turn
- 2) Equalize the division of the torque
- 3) To provide a reduction ratio
- 4) To turn the drive through a right angle

129. In the differential the ring gear is attached to the -

- 1) Bevel gear
- 2) Drive gear
- 3) Differential case
- 4) Propeller shaft

130. Hotchkiss drive is the name associated with -

- 1) A type of automatic transmission
- 2) The kind of drive for independent suspension axles
- 3) Means of taking up torque and thrust by leaf spring
- 4) A type of gear box

131. If the vehicle is a medium or heavy passenger motor vehicle, the max speed per hour in kilometers is :

- 1) 30
- 2) 40
- 3) 50
- 4) 60

132. If the vehicle is a motor cycle, the max speed per hour in kilometers is :

- 1) 45
- 2) 40
- 3) 60
- 4) 50

133. Motor cab means -

- 1) Constructed to carry not more than six members excluding driver
- 2) Constructed to carry less than ten members
- 3) Constructed to carry only four members
- 4) Constructed to carry only maximum 10 members

134. Racing or trail of speed between motor vehicles in any public place shall be punishable with -

- 1) Cancellation of licenses
- 2) Imprisonment for a term which may be extended to one year with fine or both
- 3) Fine which may extend the five thousand only
- 4) Imprisonment for a term which may extend to one month or with fine which may extend for the three hundred rupees or with both

135. The drive of a motor cycle shall, when passing or meeting a procession or a body of troops or police on the march or when passing workmen engaged on road repair, drive at a maximum speed of -

- 1) 35 km
- 2) 30 km
- 3) 40 km
- 4) 25 km

136. Motor transport was first regulated on an All India basis by -

- 1) Motor vehicles Act, 1945
- 2) Motor vehicles Act, 1914
- 3) Motor vehicles Act, 1941
- 4) Motor vehicles Act, 1950

137. If the vehicle is a light motor vehicle and the trailer has more than two wheels or a laden weight exceeding 800 kg, the maximum speed/hour in kilometers is :

- 1) 35
- 2) 40
- 3) 60
- 4) 50

138. Connecting rod end ply or side clearance is measured by using -

- 1) Vernier calipper
- 2) Screw gauge
- 3) Micrometer
- 4) Feeler gauge

139. Wishbone type suspension system is used mainly in :

- 1) Heavy vehicles
- 2) Two wheelers
- 3) Trucks
- 4) Passenger cars

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140. The axle shaft is not supported at either end by bearings in -

- 1) Semi floating axle
- 2) Full floating axle
- 3) Three-quarter floating axle
- 4) Stub axle

141. During idling the air fuel mixture requirement for running the engine is :

- 1) Lean mixture
- 2) Stoichiometric mixture
- 3) Rich mixture
- 4) I_{∞} lean mixture

142. The injector valve opening pressure of a conventional diesel engine is :

- 1) 50 bar to 100 bar
- 2) 100 bar to 150 bar
- 3) 150 bar to 250 bar
- 4) 250 bar to 350 bar

143. The cone angle of a pintle nozzle varies from -

- 1) 0° to 30°
- 2) 0° to 40°
- 3) 0° to 50°
- 4) 0° to 60°

144. Precombustion chamber engines produce -

- 1) High mean effective pressure
- 2) Low mean effective pressure
- 3) Moderate mean effective pressure
- 4) Very high mean effective pressure

145. Firing order of a six cylinder engine is :

- 1) 1-4-3-6-5-2
- 2) 1-3-4-2-5-6
- 3) 1-5-4-6-2-3
- 4) 1-5-3-6-2-4

146. Cranking circuit voltage drop tests are used to locate -

- 1) High resistance
- 2) Bad starter drive units
- 3) Weak batteries
- 4) A short in the starter motor

147. The aspect ratio on modern standard passenger car tyres ranges between -

- 1) 10 and 20
- 2) 80 and 50
- 3) 100 and 45
- 4) 25 to 50

148. The tyre's designation is stamped on the sidewall as 175/70 R 13 82 S. The number 13 refers to -

- 1) Tyre width
- 2) Rim diameter
- 3) Load index
- 4) Aspect ratio

149. The purpose of the voltage regulator is to -

- 1) Prevent the alternator voltage from going too high
- 2) Allow the alternator to produce a high current
- 3) Keep alternator speed from going to high
- 4) Keep alternator voltage high enough to charge the battery

150. The heat range of a spark plug is primarily determined by -

- 1) The depth the electrodes enter the combustion chamber
- 2) The length of the lower insulator
- 3) The number of ribs on the upper insulator
- 4) The gap between the electrodes

151. Disc brake self adjust when the lining wear allows the piston to -

- 1) Contact the disc
- 2) Slide outward through the seal
- 3) Cause seal deflection
- 4) Cause reposition of groove in the caliper

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152. In a master cylinder, the primary piston is the piston that is :

- 1) Directly operated by the push rod
- 2) Nearest the front end of the car
- 3) Hydraulically operated by the secondary piston
- 4) Needed only on vehicles with drum brakes

153. The system which allows the driver to reduce directly or indirectly the speed of a vehicle during normal driving is called -

- 1) Parking braking system
- 2) Service braking system
- 3) Secondary braking system
- 4) Retarding braking system

154. Clutch chattering (or) grabbing is noticeable -

- 1) At low speed
- 2) When engaging the clutch
- 3) When disengaging the clutch
- 4) During idling

155. In the transmission system, the provision of slip joints allow a change in the -

- 1) Length of the shaft
- 2) Angle of the drive
- 3) To give driving comfort
- 4) To increase component life

156. The power train includes the clutch, propeller shaft, differential and _____ .

- 1) Steering gear
- 2) Front axles
- 3) Suspension
- 4) Transmission

157. When the gear ratio through the transmission is 1 : 1 the transmission is in :

- 1) Over drive
- 2) Direct drive
- 3) Under drive
- 4) Neutral

158. The purpose of an interlock device is to -

- 1) Lock the transmission to prevent theft
- 2) Complete the electric current to the starting motor.
- 3) Prevent locking two gears to the output shaft at the same time
- 4) Inter lock the shift lever to prevent shifting

159. The alternator output regulation is achieved with a voltage regulator using -

- 1) Field circuit
- 2) Bridge circuit
- 3) Diode circuit
- 4) Armature circuit

160. In a parallel circuit which of the following is true?

- 1) Circuit resistance decreases as additional branches are added
- 2) Current is equal in all parts of the circuit
- 3) Only one current path to ground
- 4) None of these

161. In an alternator, alternating current is converted to direct current by the -

- 1) Stator
- 2) Brushes
- 3) Rectifier
- 4) Regulator

162. Thermistors are used in which components -

- 1) Fuel gauge sending units
- 2) Oil pressure sending units
- 3) Coolant temperature sensors
- 4) Temperature switches

163. Thrust bearing wear will cause excessive -

- 1) Crankshaft bending
- 2) Crankshaft vibration
- 3) Crankshaft endplay
- 4) Crankshaft speed

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164. The magnetic field in alternator is developed in the -

- 1) Stator
- 2) Rotor
- 3) Armature
- 4) None of these

165. The alternator brush rides on a -

- 1) Slip ring
- 2) Commutator
- 3) Rotor
- 4) Diode

166. The magnetic field required for starting motor operation is provided by the -

- 1) Armature assembly
- 2) Field-winding assembly
- 3) Solenoid
- 4) None of these

167. The basic purpose of the overrunning clutch in the starter drive is to -

- 1) Assist the solenoid during cranking
- 2) Pull the starter pinion gear out of mesh
- 3) Disengage the armature when the engine starts
- 4) Keep the hold-in winding energized during cranking

168. The ratio between the number of teeth on the starter motor pinion gear and the engine flywheel is about -

- 1) 1 to 1
- 2) 1 to 5
- 3) 1 to 20
- 4) 1 to 50

169. A solenoid uses two coils. Their windings are called -

- 1) Push-in and pull-out
- 2) Pull-in and push-out
- 3) Push-in and hold-out
- 4) Pull-in and hold-in

170. The function of ignition coil in spark ignition system is to -

- 1) Supply high voltage to spark plug
- 2) Supply low voltage to spark plug
- 3) Distribute current
- 4) None of these

171. Exhaust gas leakage into the cooling system is most likely to be due to defective -

- 1) Cylinder head gasket
- 2) Manifold gasket
- 3) Water pump
- 4) Radiator

172. If the water level in radiator is maintained low, the likely consequence could be -

- 1) Piston seizure
- 2) Engine knocking
- 3) Bearing deterioration
- 4) All of these

173. In the fluid coupling, the vortex flow is maximum when the slip is :

- 1) 20%
- 2) 50%
- 3) 100%
- 4) 75%

174. When the clutch is disengaged - (i) Clutch plate and clutch shaft rotate, pressure plate will not rotate (ii) Flywheel and pressure plate rotate, clutch plate will not rotate (iii) Flywheel and clutch plate rotate, clutch shaft will not rotate (iv) Flywheel, clutch plate and clutch shaft will not rotate, only pressure plate rotates Of these statements -

- 1) (i) alone is correct
- 2) (ii) alone is correct
- 3) (i) and (ii) are correct
- 4) (iii) and (iv) are correct

175. In the torque convertor, (i) gear ratios are in geometric progression (ii) gear ratios are in arithmetic progression (iii) numerous no. of gear ratios are produced (iv) all the above Of these statements
- 1) (i) alone is correct
3) (iii) alone is correct
- 2) (ii) alone is correct
4) (iv) alone is correct
176. In an automobile car, Hooke's joint is used between -
- 1) Flywheel and clutch
3) Gear box and propeller shaft
- 2) Clutch and gear box
4) Differential gear and wheels
177. The valve in the thermostat is opened and closed by the -
- 1) Pressure linkage
3) Vacuum linkage
- 2) Wax pellet
4) Bypass valve
178. Two types of oil pumps in automotive engines are -
- 1) Gear and Piston
3) Gear and Rotor
- 2) Rotor and Piston
4) Full flow and Bypass
179. To start the engine the starter motor rotates the crank shaft about -
- 1) 3000 rpm
3) 50 rpm
- 2) 4500 rpm
4) 200 rpm
180. The number of amperes that the battery can deliver for 30 seconds at -18°C without cell voltages falling below 7.2 V is called the -
- 1) Charging rate
3) Cold cranking rate
- 2) Reserve capacity
4) Ampere-hour rate
181. The key influencing variables concerning the adhesive behaviour of tyres on wet road surfaces are -
- 1) Driving speed
3) Wheel load
- 2) Tyre width
4) All of these
182. A clutch safety switch is :
- 1) Located in the motor feed circuit
3) In series with the control circuit
- 2) Closed when the clutch pedal is pressed all the way to the floor
4) Both (B) and (C)
183. If the engine cranks slowly but does not start, a possible cause is :
- 1) Defective starter motor
3) Driver has run-down the battery trying to start
- 2) Low temperature
4) Any of these
184. An open fault in the hold-in winding of a starter solenoid switch will most likely cause -
- 1) The battery to run down
3) The starter drive to remain engaged after the engine is running
- 2) The solenoid to move in and out (or) chatter
4) Excessively high current draw from the starter
185. Maximum vacuum advance occurs at -
- 1) Part throttle
3) Closed throttle
- 2) Only after centrifugal advance reaches maximum
4) Wide-open throttle

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186. When the starting motor operates, the armature spins about -
1) 200 rpm
2) 3000 rpm
3) 45,000 rpm
4) 50 rpm
187. The time in minutes that a fully charged battery at 27°C can deliver 25 amperes is the -
1) Charging rate
2) Reserve capacity
3) Cold cranking rate
4) Ampere hour rate
188. If a defect occurs in the mixture control solenoid electric circuit, the spring moves the plunger upward to provide -
1) Lean air-fuel ratio
2) Stoichiometric air-fuel ratio
3) Duty cycle
4) Rich air-fuel ratio
189. The length of time that the primary circuit is turned on prior to each cylinder firing is called -
1) Pick up
2) Distributor
3) Dwell
4) Shutter
190. The power windows drive unit uses following sensors to monitor motor speed during operation.
1) Position sensor
2) Magnetic sensor
3) Hall effect sensor
4) Piezo-magneto sensor
191. The inner end of the axle shaft is splined to -
1) Crown wheel
2) Cage
3) Sun gear
4) Planet gear
192. The included angle is the sum of the -
1) Camber and castor
2) Castor and SAI
3) Camber and SAI
4) Camber and toe-in
193. Which aspect is not valid in respect of disc brakes when compared to drum brakes ?
1) Light in weight
2) Complexity of design
3) More uniform wear of friction pads
4) Better anti-fading characteristics
194. The permissible mixing of cross ply and radial ply tyres allows -
1) Cross-ply tyres on left wheels
2) Cross-ply tyres on right wheels
3) Cross-ply tyres on front wheels
4) Cross-ply tyres on rear wheels
195. Tread distortion will be least on -
1) Radial ply tyres
2) Cross ply tyres
3) Cross ply belt tyres
4) Cross ply bolted tyres
196. If the engine cranks slowly but does not start, a possible cause could be -
1) A run-down battery
2) Low temperature
3) Overcharged battery
4) All of these
197. The centre of the head lights above the ground should be in the range of -
1) 0.4 - 0.6 m
2) 0.6 - 1.0 m
3) 1.0 - 1.2 m
4) 1.2 - 1.6 m

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198. A cable is designated as 12/0.35. This represents -

- 1) 0.35 mm wire diameter and 12 mm length
- 2) 0.35 mm wire radius and 12 mm length
- 3) 0.35 mm wire diameter and 12 wires
- 4) 12 wires of 0.35 mm pitch

199. The place where truck and bus lines have their own service shops is called -

- 1) Independent garages
- 2) Fleet garages
- 3) Specially garages
- 4) Service stations

200. In a three-way converter, the first converter controls -

- 1) Hydro carbon
- 2) Carbon monoxide
- 3) Oxides of nitrogen
- 4) All of these