

Unit 13 - Week 12

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Assignment 12

The due date for submitting this assignment has passed. **Due on 2020-04-22, 23:59 IST.**
 As per our records you have not submitted this assignment.

1) In a twin tube shock absorber, the _____ acts as a reservoir for excess oil. 1 point

reserve tube
 pressure tube
 upper tube

No, the answer is incorrect.
Score: 0
Accepted Answers:
reserve tube

2) Which one of the following is true about a mono tube shock absorber? 1 point

It has a reserve tube.
 It has only one piston.
 It has a floating piston separating the oil from the nitrogen gas.
 It has one rigid tube that is connected to both the upper and lower mounts.

No, the answer is incorrect.
Score: 0
Accepted Answers:
It has a floating piston separating the oil from the nitrogen gas.

3) A loosely sprung vehicle 1 point

provides good ride comfort and good road holding.
 provides good ride comfort with a trade-off in road holding.
 provides good road holding with a trade-off in ride comfort.
 provides poor ride comfort and poor road holding.

No, the answer is incorrect.
Score: 0
Accepted Answers:
provides good ride comfort with a trade-off in road holding.

4) Side-to-side scrubbing tyres would be highest in 1 point

MacPherson strut suspension.
 double wishbone suspension.
 trailing arm suspension.

No, the answer is incorrect.
Score: 0
Accepted Answers:
double wishbone suspension.

5) A dependent suspension that is commonly used in the rear of front-wheel driven vehicles and has trailing arms to provide structural support is the 1 point

solid axle leaf spring suspension.
 solid axle coil spring suspension.
 beam axle suspension.

No, the answer is incorrect.
Score: 0
Accepted Answers:
beam axle suspension.

6) The _____ is used to minimize the roll motion in an independent suspension. 1 point

Panhard rod
 A-arm
 trailing arm
 stabilizer bar

No, the answer is incorrect.
Score: 0
Accepted Answers:
stabilizer bar

7) The number of degrees of freedom in a quarter car model is 1 point

1
 2
 4
 7

No, the answer is incorrect.
Score: 0
Accepted Answers:
 2

8) Consider the case when tyre stiffness is much larger than the suspension stiffness. If the suspension stiffness is doubled and the sprung mass is halved, then the natural frequency of the sprung mass mode is 1 point

doubled.
 halved.
 divided by four.
 multiplied by four.

No, the answer is incorrect.
Score: 0
Accepted Answers:
doubled.

9) As per ISO 2631, the frequency range of interest for analyzing motion sickness is 1 point

1 Hz to 50 Hz.
 0.5 Hz to 80 Hz.
 50 Hz to 80 Hz.
 0.1 Hz to 0.5 Hz.

No, the answer is incorrect.
Score: 0
Accepted Answers:
0.1 Hz to 0.5 Hz.

10) The parameter that is most sensitive to peaks when analyzing ride comfort is 1 point

RMS acceleration.
 weighted RMS acceleration.
 maximum transient vibration value.
 vibration dose value.

No, the answer is incorrect.
Score: 0
Accepted Answers:
vibration dose value.

11) Compared with a pure electric vehicle, an electric vehicle with range extender has 1 point

more range but has tail pipe emission.
 more range with no tail pipe emission.
 less range but has tail pipe emission.
 less range with no tail pipe emission.

No, the answer is incorrect.
Score: 0
Accepted Answers:
more range but has tail pipe emission.

12) For a given motor maximum power and maximum speed, an increase in the speed ratio results in 1 point

better acceleration but poorer gradeability.
 better acceleration and better gradeability.
 poorer acceleration and better gradeability.
 poorer acceleration and poorer gradeability.

No, the answer is incorrect.
Score: 0
Accepted Answers:
better acceleration and better gradeability.

13) If the maximum speed of a motor is doubled and its base speed is halved, then its speed ratio is 1 point

divided by four.
 halved.
 doubled.
 multiplied by four.

No, the answer is incorrect.
Score: 0
Accepted Answers:
multiplied by four.

14) Considering only inertia, the motor power required to meet a given acceleration performance is _____ when the final speed is increased from base speed to twice that of base speed. 1 point

multiplied by 4
 multiplied by 3
 multiplied by 2.5
 multiplied by 2

No, the answer is incorrect.
Score: 0
Accepted Answers:
multiplied by 2.5

15) The rings of steel wire that run along the inner edges of the tyre are called 1 point

treads.
 beads.
 plies.
 belts.

No, the answer is incorrect.
Score: 0
Accepted Answers:
beads.

16) A higher tyre aspect ratio results in 1 point

better ride comfort and better handling performance.
 reduced ride comfort and reduced handling performance.
 reduced ride comfort but better handling performance.
 reduced handling performance but better ride comfort.

No, the answer is incorrect.
Score: 0
Accepted Answers:
reduced handling performance but better ride comfort.