

Name:

Enrolment No:



**UNIVERSITY OF PETROLEUM AND ENERGY STUDIES**

**End Semester Examination, May 2022**

**Course:** Auto Cert. and Homologation

**Semester:** VIII

**Program:** B.Tech ADE

**Course Code:** MEAD-4007

**Time : 03 hrs.**

**Max. Marks: 100**

**Instructions:**

**SECTION A**  
**(5Qx4M=20Marks)**

S. No.		Marks	CO
Q 1	Define the Term NVH and enlist the various Testing conducted on vehicle for NVH.	5	CO1
Q.2	Define the term used in vehicle testing A) Head Restraints B) True Speed	5	CO1
Q.3	“Day time running lamp” is mandatory in two wheelers as per ARAI, Justify.	5	CO2
Q.4	Compare the two wheeler and four wheeler safety on the basis of features provided.	5	CO2

**SECTION B**  
**(4Qx10M= 40 Marks)**

Q.5	Usually, Two types of testing procedure every manufacturer has to get through, type approval and conformity of production, briefly explain its significance in the Auto Vehicle testing.	10	CO3
Q.6	Explain “The fuel economy” on the basis on following factors A. Tyre road condition B. Traffic condition C. Driving habits	10	CO3
Q.7	Compare to two wheeler certifications between IC engine based and Battery operated vehicle (BoV)	10	CO2
Q.8	Pillion Hand Hold is considered as important member on the two wheeler, explain in detail how it is being tested from safety point of view.	10	CO3
	OR		
Q.9	Categories the below mentioned safety systems used in automobiles into passive and active safety system	10	CO3

	Anti-lock braking system (ABS), Airbag (AB), Seat Belt (SB), electronic stability control (ESC), adaptive cruise control (ACC), tire pressure monitoring system (TPMS), occupant sensing systems (OSS), lane departure warning (LDW), night vision system (NVS), blind spot detection system (BSDS), whiplash protection (WP), driver monitoring (DM), road sign recognition (RSR), automatic emergency braking (AEB), child safety system (CHS), pedestrian safety system (PSS)		
<b>SECTION-C</b> <b>(2Qx20M=40 Marks)</b>			
Q 10	As a Certification agency person and a tyre testing engineer, you have been asked to assess the Bridgestone (OEM) tyre before providing them conformity of production approval. A. Enlist testing need to perform on the tyre with justification of its need. B. Explain the procedure to perform rolling resistance testing on the tyre.	<b>20</b>	<b>CO4</b>
Q.11	As a automotive manufacturer, according to the existing norms of NVH you need to perform the Pass by noise test on the vehicle. A. With proper test set up diagram explain the test procedure. B. Explain different noise limiting values for various categories of vehicle like M and L. C. Various operating conditions need to follow before and during the test	<b>20</b>	<b>CO4</b>
<b>OR</b>			
Q.12	How to evaluate steering effort of an automotive vehicle? Explain in detailed how the steering effort test conducted on vehicle in order to get the approval of conformity of production.	<b>20</b>	<b>CO4</b>