12/5/17

Auto - Autotronics

Sem VIII (CBSGS)

Q.P. Code: 13514

(3 Hours) (Total Marks: 80)

N.B: 1. Question No. **1** is **compulsory**.
2. Attempt any **Three** from remaining questions.
3. Draw neat sketches wherever necessary.

Q.1 Write comparison (differentiate) between the following: 20
a) Lead acid battery and Alkaline battery
b) Dynamo and Alternator
c) Reserve capacity and Cold Cranking Ampere capacity with its graph
d) Coil ignition system and magneto Ignition system

Q.2 a) Define Torque terms used in relation with Engine and Starting system. Also classify Starter motor drives and with neat sketch explain the working of anyone type of Starter motor drive. 10

b) Describe in detail CDI and DIS with proper diagrams and differentiate between the two. 10

Q.3 a) Describe the working of PEM and Alkaline fuel cells in brief with suitable sketches and reactions. 10

b) Discuss with suitable sketches the functioning of any three types of Automotive Sensors. 10

Q.4 a) Discuss with suitable sketches the functioning of any three types of Automotive Actuators. 10

b) Explain the various Cables, their sizes, color codes and wiring harness systems used in Automotive Vehicles. 10

Q.5 a) Describe the working of any two intelligent Vehicle systems with suitable schematic diagrams and also mention their applications. 10

b) What is the need of 42 volt automotive electrical system? Explain transition from 12 volt to 42 volt system with its advantages and disadvantages. 10

Q.6 Write short-notes on any **four** of the following: 20
a) Automotive embedded system
b) Sealed beam head lamp construction
c) Power operated windows
d) Air management system
e) Rectification from AC to DC

AUTO / CBSGS / VII / Sem VIII / 30-May 2015

18/05/15

Q.P. Code :13522

Time: 3 Hrs

Max Marks: 80

NB:

1. Question No 1 is compulsory
2. Answer any three questions from remaining
3. Assume suitable data if required
4. Draw sketches to justify your answer

1.	(a)	Derive an equation for doubly conjugate point.	10
	(b)	Calculate the doubly conjugate point for the following data M= 1000 Kg M_s=727 Kg Wheel base= 2.286 m. Front/rear distribution= 40/60 K_1 front = 21.7 KN/m K_2 rear = 25 KN/m	10
2.	(a)	Derive an expression for steady state yaw response to steering input.	10
	(b)	Explain wheel Wobble and Wheel shimmy.	10
3.	(a)	Explain the cornering dynamics of pneumatic tires.	10
	b)	Explain over- steering and Under-steering.	10
4.	(a)	Derive an expression to prove C_{21}=G_{12} with equalizing suspension system.	10
	(b)	Explain the advantages of front wheel drive with suitable vector diagram.	10
5.		Write short notes on any four of the following.	10
	(a)	Road resistance.	
	(b)	Anti-Roll Bar	
	(C)	Tyre Vibration	
	(d)	Conicity and Ply steer.	
	(e)	Aerodynamic lift.	

AUTO/ VIII/ CBSGS/ VM/ 24.05.2017

T3928 / T1813 - VEHICLE MAINTENANCE

Q.P.Code: 013653

(3 Hours) **[Total Marks: 80]**

N.B: (1) Question no 1 is compulsory.

(2) Attempt any THREE out of remaining FIVE questions.

(3) Figures to the right indicate full marks.

(4) Illustrate your answers with sketches wherever necessary.

Q.1 Attempt any FOUR from following SIX questions. 20

a. What is the need of engine's cylinder head valves and valve related parts in regular operation of engine? 05

b. Explain the five things that should be done prior to aligning the headlight. 05

c. What is the need of deploying the security and anti theft devices in automobile? 05

d. Explain the working operation of Power mirror system. 05

e. What is double declutching? State its effect on vehicle performance if any with suitable reasoning. 05

f. During the normal running of car on the road surface alternator belt slips from pulley, what will be its effect on battery charging? Explain in detail. 05

Q.2 a. Explain the complete installation procedure in detail for camshaft and its bearings. 10

b. Which type of automotive battery you will suggest for your vehicle? Support your answer with proper justification. 04

c. While diagnosing the seat belt that will not buckle: Technician A looks inside the buckle. Technician A looks inside the buckle and disassembles it and moves any obstructions that may prevent it from latching onto the belt latch. Technician B replaces the buckle if the obstruction cannot be easily removed from the buckle. What is correct? Explain it with justification. 06

Q.3 a. Explain the working of rear window defroster 06

b. What is the difference between active and passive restraint systems? Explain importance of having restrain system in automobile. 06

c. While discussing the power flow through five speed transmission while it is in first gear. Technician A says that power enters on input shaft, which rotates the countershaft that is engaged with first gear. Technician B says that first gear synchronizer engages with clutching teeth of first gear and locks the gear to the main shaft, allowing power to flow from input gear through the countershaft and to the first gear and the main shaft. Who is correct? Justify your answer. 06

d. Explain the need of effective suspension system 02

Q.4 a. Explain fuel injection system diagnosis and service 10

b. Explain trouble diagnosis of final drive. 10

Q.5 a. Explain Power steering diagnosis and service. 10

b. Explain various clutch problems diagnosis and service. 10

Q.6 Attempt any FOUR from following SIX questions. 20

a. How the failure of Cooling system will affect the vehicle performance? 05

b. Explain the need of carrying out starting system diagnosis and service 05

c. What is the need of having air bag system? 05

d. Explain the operation of Power Lock system. 05

e. Explain the various U Joint problems. 05

f. Explain the brake calliper inspection procedure. 05

AUTO / SEM VIII / CBSGS / PM / 30-5-17

T3928 / T1745 3) PROJECT MANAGEMENT

Q.P.Code: 018194

(CBGS)
(3 Hours) **[Total Marks 80]**

N.B.:
(1) **Question No.1 is compulsory**
(2) Attempt any **three** questions out of remaining **five** questions
(3) Figures to right indicate full marks
(4) Assume suitable data if **necessary**.
(5) Notations carry usual meaning.

Q.1 Write short notes on the following (Any four) 20
i) Need of Project Management
ii) Work break down structure
iii) Concurrent Engineering
iv) Risk management
v) Goldratt's critical chain method

Q.2 (A) Following are the manpower requirements for each activity in a project 10

Activity	Normal time	Man power Required
0-1	2	4
1-2	3	3
1-3	4	3
2-4	2	5
3-5	4	3
3-6	3	4
4-7	6	3
5-7	6	6
6-8	5	2
7-9	4	2
8-9	4	9

a) Draw the network diagram of the project activities
b) Rearrange the activities suitably for reducing the existing total man power requirement.

(B) What is a Project Portfolio Process? Explain different steps involved in this. 10

Q.3(A) What are four stages of team development and growth? What are advantages of effective team? What are barriers to team effectiveness? 10

TURN OVER

(B) What are the numeric models of project selection? Explain in brief. 05

(C) What are the different ways of Closing a Project? 05

Q.4 (A) Swanson Industries has four potential projects all with an initial cost of 2,000,000. The capital budget for the year will only allow Swanson industries to accept one of the four projects. Given the discount rates and the future cash flows of each project, which project should they accept using NPV method. 10

Cash Flows	Project A	Project B	Project C	Project D
First Year	500000	600000	1000000	300000
Second Year	500000	600000	800000	500000
Third Year	500000	600000	600000	700000
Fourth Year	500000	600000	400000	900000
Fifth Year	500000	600000	200000	1100000
Discount Rate	6%	9%	15%	22%

(B) Draw an Earned value chart and describe the three variances of it and explain their significance. 10

Q.5(A) Compare the top down budgeting and bottoms up budgeting in project planning 05

(B) How communication is planned and managed in project management. 10

(C) Explain how a project is monitored and controlled for project execution. 05

Q.6 (A) Explain project management template with a sample template sheet 08

(B) Explain various project estimation and scheduling techniques. 06

(C) A consulting project has an actual cost of Rs 50000, Scheduled cost Rs 42000, and value of completed work of Rs 46000. 06

Find the Schedule and Cost Variance Also Find SPI and CPI

AUTO | SEM VIII | CBSGS | VS | 30-5-17

Q.P. Code :17145

(3 Hours) **Total Marks: - 80**

Please check whether you have got the right question paper.

N.B: (1) Question no.1 is compulsory.
(2) Attempt any three out of remaining five questions.
(3) Figures to the right indicate full marks.
(4) Illustrate your answers with sketches wherever necessary.

Q.1		Answer any **four** of the following:	
	a	Explain the causes of accidents for all types of vehicles.	05
	b	Explain the significance of head restraint position.	05
	c	Explain the application of any two software used in accident reconstruction analysis.	05
	d	Explain how accident data is interpreted?	05
	e	Explain injury tolerance limits with an example.	05
Q.2	a	Explain the Euro-NCAP test procedure for pedestrian protection.	10
	b	Compare quasistatic seat test with hydge sled test.	10
Q.3	a	Explain the main steps in the reverse projection photogrammetry process.	10
	b	Explain the significance of occupant simulation and biomechanics.	10
Q.4	a	Explain the design requirements for frontal collision.	10
	b	Explain in detail the working of antilock braking system. How wheel slip is calculated?	10
Q.5	a	Explain any one recent innovation in automotive safety system.	10
	b	Explain any five types of illustrative errors.	10
Q.6	a	Explain in detail the four aspects of universal design.	10
	b	Explain key issues of vehicle safety in India. Support your answer with a case study.	10

B.E/Sem VIII/Auto/CBSGS/Autotronics/23/11/17

Q. P. Code: 25788

(3 Hours) [Total Marks: 80]

N.B: 1. Question No. 1 is compulsory.
2. Attempt any Three from remaining questions.
3. Draw neat sketches wherever necessary.

Q.1 Write comparison (differentiate) between the following: 20
a) Alkaline Battery and Alkaline Fuel cell
b) D.C Generator and A.C. Generator
c) Direct ignition & waste spark ignition system
d) Sensors and Actuators

Q.2 a) Define and Explain with neat sketches: (i) Air management system and (ii) Rectification from AC to DC 10

b) Describe in detail CDI and Distributorless Ignition System with proper diagrams. 10

Q.3 a) Describe the working of AFC (Alkaline fuel cells) in brief with suitable sketches, reactions, Applications and limitations. 10

b) Explain the various Cables, their sizes, color codes and wiring harness systems used in Automotive Vehicles. 10

Q.4 a) What is the need of 42 volt automotive electrical system? Explain transition from 12 volt to 42 volt system with its advantages and disadvantages. 10

b) Discuss with suitable sketches the functioning of any three types of Automotive Sensors. 10

Q.5 a) Describe the working of any two Intelligent Vehicle systems with suitable schematic diagrams and also mention their applications. 10

b) Discuss with suitable sketches the functioning of any three types of Automotive Actuators. 10

Q.6 Write short-notes on any four of the following: 20
a) Sealed beam head lamp
b) Standard Bendix drive
c) Power operated windows
d) Types of Starter motor drives and Torque terms used
e) Automotive embedded system

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Q.P. Code :13524

Time: 3 Hrs | Max Marks: 80

NB:

1. Question No 1 is compulsory
2. Answer any three questions from remaining
3. Assume suitable data if required
4. Draw sketches to justify your answer

1.	(a)	Calculate the Conjugate point for the following data. Total Mass= 1000 Kg Spring Mass= 800 Kg Wheel Base= 2.5 m Front/Rear weight distribution = 65/35 Front suspension = 30 KN/m Rear Suspension = 50 KN/m	10
	(b)	Explain Wheel Wobble and Wheel Shimmy.	10
2.	(a)	Explain the Properties of Roll Center	10
	(b)	Derive an expression to calculate the value of X_2 for simple spring and mass system of two masses similar to an Automobile.	10
3.	(a)	Explain Under-steer and over-steer.	10
	(b)	Explain No Roll suspension and Interconnected suspension system.	10
4.	(a)	Find Yawing Velocity of a Car when moment 250 NM is acting through CG for the following data. Mass = 1200 Kg Wheel Base= 2.5 m a= 1.4 m and b= 0.9 m C_F = – 70 000 N/rad C_R = – 75 000N/rad Speed = 90 Kmph	10
	(b)	Explain the working of central tyre inflation	10
5.	(a)	Explain the Roll geometry for any two Suspension system.	10
	(b)	Derive an expression for Steady state yawing response to steering input.	10

BE AUTO / VIII / CBSGS / PM / 13-12-17

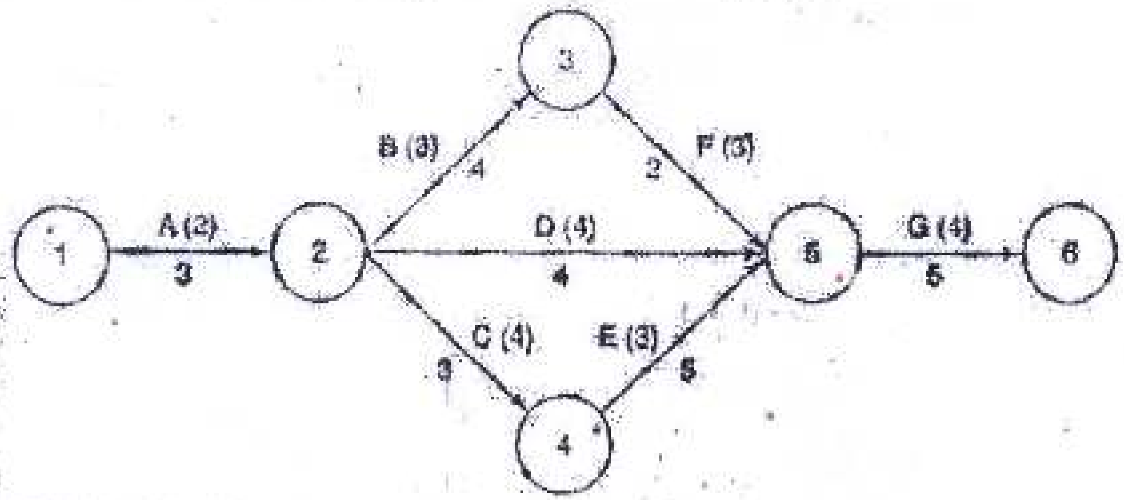
QP CODE : 27743

(3 Hours) Marks : 80

NB : (1) Question **No.1** is **Compulsory.**
(2) Attempt **any three** questions out of remaining **five** questions.
(3) Assume suitable data if necessary
(4) **Figures** to the **right** indicate full **marks.**
(5) Notations carry usual meaning.

1. Write short motes on the following **(any four)** 20
   (i) Top down and bottoms up budgeting
   (ii) Concurrent Engineering
   (iii) Role of Project Manager
   (iv) Triple constraints in project management
   (v) Goldratt's Critical Chain Method

2. (a) Following network shows a project having various activities in AOA format. Above the arrow the alphabet denotes the activity name and the number in parentheses denotes the number of crew members required for carrying out the activity. The number below the arrow indicates time duration. 15



Draw a Gantt AOA chart from the above and construct a resource loading diagram. If the time duration of the project cannot be increased above 16 days how many minium crew members are required in the team. If available crew members are only 7, how many days will be required to finish the project ?

(b) Compare the Functional, Pure Project and Matrix organizations. 5

[TURN OVER

3. (a) Explain project stage gate process of managing project life cycle. Explain how helps top management in keeping project on right track.
   (b) What is a scope creep ? How does formal change control system works in proje management ?

4. (a) A software development project at day 70 exhibits an actual cost of Rs.78,00(and the scheduled cost of Rs. 84,000/-.The software manager estimates a value completed work of Rs.81,000/-.What are the cost and schedule variances and CS Estimate the time variance assuming linear relation between time and cost.
   (b) What are the different ways of Closing a Project ?
   (c) What is a Risk breakdown structure? How the impact scales are defined for vario project objectives ?

5. (a) How do project audit recommendations help the project ? What are types of proje audits based on the depth of audit ?
   (b) Draw an Earned value chart and describe the three variances of it and explain the significance.

6. (a) Explain project management template with a sample template sheet.
   (b) What are four stages of team development and growth ? What are the barriers t team effectiveness ?

BE Autom VIII (CBSGS)
Nov Dec 18
Autronics

Paper / Subject Code: 52201 / Autotronics

(3 Hours) [Total Marks: 80]

N.B. 1. Question No. 1 is compulsory.
2. Attempt any Three from remaining questions.
3. Draw neat sketches wherever necessary.

Q.1 a) Sketch and explain the construction and working of Lead acid battery Also write about its maintence. 10

b) Mention the function of various lamps used in Automotive vehicle and also describe the construction and working of head lamp system. 10

Q.2 a) Define and Explain with neat sketches: (i) Air management system and (ii) Rectification from AC to DC. 10

b) Describe in detail CDI and Distributorless Ignition System with proper diagrams. 10

Q.3 a) Describe the working of AFC (Alkaline fuel cells) in brief with suitable sketches, reactions, Applications and limitations. 10

b) Explain the various Cables, their sizes, color codes and wiring harness systems used in Automotive Vehicles. 10

Q.4 a) What is the need of 42 volt automotive electrical system? Explain transition from 12 volt to 42 volt system with its advantages and disadvantages. 10

b) Discuss with suitable sketches the functioning of any three types of Automotive Sensors. 10

Q.5 a) Describe the working of any two Intelligent Vehicle systems with suitable schematic diagrams and also mention their applications. 10

b) Discuss with suitable sketches the functioning of any three types of Automotive Actuators. 10

Q.6 Write short-notes on any four of the following: 20

a) Standard Bendix drive
b) Reformers in fuel cells
c) Power operated windows
d) Classification of Starter motor drives and Torque terms used
e) Automotive embedded systems

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Auto/BE VIII/CBSGS/VM/4/12/2018.

Paper / Subject Code: 52203 / Vehicle Maintenance

(Time: 3 Hours) **Marks: 80**

N.B.: (1) Question No. 1 is compulsory.
(2) Attempt any 3 questions out of 5 questions.
(3) Figures to the right indicates full marks.
(4) Illustrate your answers with sketches wherever necessary.

Q.1	Solve any four from remaining in six questions	20
a)	Explain the functions of cooling system in automotive	05
b)	Write a note on Wheel alignment procedure	05
c)	What are the types of vehicle maintenance carried out in vehicle	05
d)	List a maintenance to be carried out for any 4-wheeler after first 20,000 km run	05
e)	Which materials are used for Brake shoe and lining and what are its properties	05
f)	What is mean by Engine Tuning	05
Q.2		20
a)	What are various lighting systems controlled by head light switches	10
b)	Explain working of rear window defogger system	06
c)	Explain various problems and their causes for U joints	04
Q.3		20
a)	Describe diagnosis of suspension and steering system	10
b)	List out causes and remedies for Differential noise	05
c)	What do you mean by symptom-based diagnosis	05
Q.4		20
a)	Describe diagnosis and servicing of engine lower end theory	10
b)	Explain power steering system diagnosis and servicing in detail	10
Q.5		20
a)	Explain the diagnosis and servicing of starting system	10
b)	Explain the diagnosis and servicing of Fuel injection system	10
Q.6	Solve any four from remaining in six questions	20
a)	How to do the servicing of battery	05
b)	How Multimeter can be used for various testing in automobile systems	05
c)	Write a note on security and anti-theft devices	05
d)	What are functions of seat belt and air bags in automobile	05
e)	List out difference between transaxles and transmission	05
f)	What do you mean by Clutch Juddering and dragging	05

Auto / BE VII / CBSGS / VS / 11/12/2018

Paper / Subject Code: 52205 / 2) Vehicle Safety

(3 Hours) **Total Marks: - 80**

N.B: (1) Question no.1 is compulsory.
(2) Attempt any three out of remaining five questions.
(3) Figures to the right indicate full marks.
(4) Illustrate your answers with sketches wherever necessary.

Q.1 Answer any **four** of the following:

a	Explain the significance of crash energy.		05
b	Explain hydge sled test.		05
c	Explain redundant system with an example.		05
d	Explain occupant simulation in the context of vehicle safety.		05
e	Explain fail safe mechanism with an example.		05

Q.2	a	Explain in detail public health analogy.	10
	b	Explain in detail vehicle accident investigation and reconstruction.	10
Q.3	a	Explain any one automotive active safety system.	10
	b	Explain self-aligning head restraint in the context of vehicle safety	10
Q.4	a	Explain the evolution of dummies used in impact testing.	10
	b	Explain the significance of H- point testing.	10
Q.5	a	Explain risk communication with examples.	10
	b	Explain the working principle of airbag and different types of airbags.	10
Q.6	a	Explain the design requirements for frontal collision.	10
	b	Explain with a case study key issues of vehicle safety in India.	10

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AUTO/ VIII/ CBSGS/ AUTOTRONICS / 8/5/18

Q.P.Code: 40301

Time: 03 Hours Marks: 80

N. B. (1) Question No. 01 **compulsory**.

(2) Attempt any three questions out of remaining five questions.

(3) Justify your answer with neat sketches.

Q. 01 Attempt any **four** out of six. 20

i) What are requirements of battery systems?

ii) Explain rectification from AC to DC.

iii) Explain direct ignition system.

iv) Explain hot wire thin film air flow sensor?

v) Explain power operated window.

vi) Write a note on Global Positioning System.

Q. 02 A) What is fuel cell? Explain the construction and working of PEM fuel cell with suitable sketch and their reactions. 10

B) Explain in brief various cables, their sizes, color codes and wiring harness systems used in automotive vehicles. 10

Q. 03 A) Explain principle, construction and working of generator. How it is different from alternator? 10

B) Explain following with neat sketch. 10

i) Rain sensors ii) Oxygen sensor

Q. 04 A) Explain construction, working and setting of head lamp. 10

B) Explain in brief any two types of starter motor drives. 10

Q. 05 A) What is the need of 42 volt technology? Explain transmission from 12 volt to 42 volt system with its advantages and disadvantages. 10

B) Explain following with neat sketch. 10

i) Motorized actuator ii) Stepper motor

Q. 06 A) Describe working of any two intelligent vehicle systems with suitable schematic diagram and also mention their applications. 10

B) Explain in brief Electronic Control Module (ECM) and Operating modes of ECM. 10

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Auto / VIII / ~~IT~~ CBSGS / VD / 16/05/18

Q.P.Code: 39804

(3 Hours) **[Total Marks: 80]**

NB: - 1) Draw neat sketches whenever necessary.
2) **Q. No. 1** is compulsory.
3) Solve any **three** questions from the remaining five questions.
4) Assume suitable data wherever necessary.

Q.1 Answer **any five** of the following : 20

a) What are the advantages of rack and pinion type of steering gear ?
b) What are the mechanisms which generated lateral forces at tyre road contact patch during cornering? Explain in short any one.
c) Why suspension spring rates are kept low practically?
d) What are the sensors used in vehicle dynamics control system? Explain any one.
e) What is rolling resistance? Enlist mechanisms which generate rolling resistance.
f) Enlist aerodynamic aids used to reduce profile drag and explain any one.

Q.2 a) Find the curvature response per degree of steering angle at 60 kpH. The data given as : 10
Mass of the vehicle – 1200 Kg
Wheel base – 2.4 m
Position of CG from front axle – 1.25 m
Cornering stiffness of front tyres – 60 KN/rad
Cornering stiffness of rear tyres – 65 KN/rad

b) Explain special properties of double conjugate points. How it is applied to real vehicle? 10

Q.3 a) What is variable rate springs? Explain the importance of variable rate in context with vehicle dynamics. 10

b) Explain over steer, neutral steer and under steer with the help of stability derivatives. 10

Q.4 a) Find the distance between the double conjugate points for the passenger car – 10
Sprung mass = 900 kg, wheel base = 1.2 m . Distance of CG from front axle = 1.2 m ,
Front suspension stiffness = 50 KN/m,
Rear suspension stiffness = 150 KN / m.

b) What are the tyre properties used during cornering? How cornering stiffness affects vehicle performance? 10

TURN OVER

Q.5 a) Explain mechanics of air flow around a vehicle with aerodynamics aids and explain how drag is created ?

b) Derive an equation for steady state response to side force. Explain the importance of stability derivatives.

Q.6 Write short note on **(Any Four)**

a) Vehicle Dynamics simulations
b) Ride
c) Active suspension
d) Anti rollover braking
e) Roll center and roll axis
f) Wheel wobble and wheel shimmy

AUTO/ VIII/ COSGS/ VM/ 22-5-18

Q.P. Code: 27044

Time: 3 Hours **Marks: 80**

N.B: Question no.1 is compulsory.

Solve any 3 from remaining Questions.

Q. 1 Write answer for any four questions

a) Explain cooling system diagnosis in detail 5

b) What is the purpose of engine's cylinder head valves and valve related parts? 5

c) Write short note on Power Steering 5

d) What is active and passive restraint systems? 5

e) State the difference between transmission and trans axle. 5

f) Explain the phenomenon of roll over protection. 5

Q. 2

a) Explain starting system diagnosis and service procedure in detail. 10

b) Explain the major parts of typical air bag system in detail. 10

Q. 3

a) Explain transmission diagnosis in details. 10

b) What are the components of suspension system and explain in detail. 10

Q. 4

a) Why discharging rate of battery is high in some cases? Explain its causes and effects. 8

b) What is differential and explain its working in detail with sketch 8

c) What is event data recorder and Precollision system and explain it. 4

Q. 5

a) Explain power steering trouble diagnosis and servicing procedure. 10

b) What are the various lighting system controlled by head light switches? 10

Q. 6 Write short note on: (Any four)

a) Flywheels 5

b) Sound system 5

c) Cigarette system 5

d) Engine bearings 5

e) Clock system 5

Auto | Sem VIII | CBSGS | VS | 02/05/18

Q.P.Code: 39881

(3 Hours) **Total Marks: - 80**

N.B: (1) Question no.1 is compulsory.
(2) Attempt any three out of remaining five questions.
(3) Figures to the right indicate full marks.
(4) Illustrate your answers with sketches wherever necessary.

Q.1 Answer any **four** of the following:

a Explain the importance of tyre marks in accident investigation. 05
b Explain the significance of head restraint position. 05
c Explain universal design. 05
d Explain the significance of accident data. 05
e Explain the injury tolerance limits of any one body part. 05

Q.2 a Explain the application of basic principles of engineering mechanics in accident reconstruction analysis. 10

b Explain the significance of occupant simulation and biomechanics. 10

Q.3 a Explain the design requirements for frontal collision. 10

b Explain in detail the functions of different components in antilock braking systems. 10

Q.4 a Explain in detail any one active safety system for pedestrian protection. 10

b Explain any five types of illustrative errors. 10

Q.5 a Explain self-aligning head restraint for whiplash prevention in detail. 10

b Explain key issues of vehicle safety in India. Support your answer with a case study. 10

Q.6 a Explain how Euro-NCAP conducts pedestrian protection test? 10

b Explain any one seat testing procedure in the context of rear impact. 10

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