BHARTIYA SKILL DEVELOPMENT UNIVERSITY

Registration No.: .....

School of AutomotiveSkills

Session: 2020-21 (Winter Semester)

B. Voc. Program,VthSemester,

IInd In-Sem. Examination

Course Code: AUT 1501 **Time: 1 Hour**

Course Name: Automotive Mechatronics System **Max.**

Marks: 20

Instruction: (a) All questions are compulsory.

(b) Marks for every question are given Section wise.

Section – A

05X01 = 05 Marks

1. Full load phase fuel- air calculations are based on
   (a) RPM (b) Throttle position
   (c) Both (a) & (b) (d) None of the above.
2. NOx emissions can be controlled by higher percentage of EGR
   (a) True. (b) False.
3. Platinum & rhodium are NOT used in catalytic converter
   (a) True (b) False.
4. Catalytic converter should be placed _____ to the engine
   (a) As close as possible (b) As far as possible.
   (c) Anywhere in exhaust . . (d) None of the above.
5. Higher compression ratio leads to improved thermal efficiency
   (a) True (b) False

Section – B

03X02 = 06 Marks

6. Write short note on acceleration phase of a typical EMS (engine management system).
7. Justify the statement : " CO (carbon mono- oxide is essential in exhaust to produce CO_2 & H_2O"
8. What is variable compression ratio(VCR) engine and how does electronics helps in achieving VCR? .

Section – C

03X03 = 09 Marks

9. How does variable valve timing help in reducing exhaust emissions over different rpm?
10. How does cylinder de-activation work ? Explain any two advantages of cylinder de-activation?
11. How does Bosch Motronic M3 calculate the after – start enrichment phase??

School of Automotive Skills

Session 2020-21 (Winter Sem)

B. Voc, V Semester

II - In Sem

ANSWER SHEET

Course code : AUT 1501 : Automotive Mechatronics System

SECTION - A

1. (c)
2. (a)
3. (b)
4. (a)
5. (a)

SECTION - B

6. Short Note on acceleration phase of EMS.

When acceleration is detected by ECU through change of throttle potentiometer signal,

- enrichment occurs over a number of ignitions, pre programmed
- enrichment factor is adjusted by coolant temperature and pressure variation in inlet manifold
- the enrichment then decreases over a set number of ignitions.

7. Unless CO is present in exhaust, the correct A:F ratio will not allow to produce CO_2 and H_2O. As given in following chemical reactions

$$2CO + O_2 \longrightarrow 2CO_2 ; \quad 2C_2H_6 + 2CO \rightarrow 4CO_2 + 6H_2O$$

$$2NO + 2CO \rightarrow N_2 + 2CO_2$$

8. VCR. We know higher CR means higher thermal efficiency, but at higher temperature the air density reduces and thus fuel does not burn fully. To overcome this problem if we can vary the CR over different RPM and temperature, the efficiency will be good. NISSAN Turbo (infiniti) can vary CR from 8:1 to 14:1

SECTION-C

9. Variable Valve Timing: In mechanical systems only the valve timing can be advanced or retarded but the duration of valve control cannot be changed. Some engines have this feature but it is very complicated. At higher rpm less O_2 enters the cylinder so the fuel does not burn fully and leads to pollution. In electronic system the duration of valve op can be changed thus more O_2 can come in for proper combustion of fuel.

10. Cylinder de-activation: It is also called "displacement on demand" and in this the op of cylinder is stopped if the requirement of power is less. It can be done by
- controlling spark or controlling fuel.
and is seamless and the cylinders are changed to avoid overheating of one or two cylinders.

11. Bosch M3: After-Start Enrichment Phase.

Enrichment is necessary to avoid stalling and is determined by water & air temp.
- if engine is cold then by water temperature
- if engine is warm - by air & coolant temp.
It's not necessary that always a cold engine is only started.

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

Registration No.: .....

School of Automotive Skills

Session: 2020-21 (Winter Semester)

B. Voc. Program, 5th Semester,

2nd In-Sem. Examination

Course Code: AUT1502 **Time: 1 Hour**

Course Name: Automotive Electrical and A.C. **Max. Marks: 20**

Instruction:

1. Answer all questions from section – A, each question carries one mark.
2. Answer all questions from section – B, each question carries two marks.
3. Answer all questions from section – C, each question carries three marks.

Section – A

05X01 = 05 Marks

Q1. Which of the following topology is used for MOST System?

a) Star.
b) BUS.
c) Ring.
d) All of the above.

Q2. Which of the following system/device is not mandatory to measure a value in the vehicle?

a) ECU.
b) Wiring.
c) Sensor.
d) CAN-BUS.

Q3. A hydrometer is used to determine:

a) Relative Humidity.
b) Buoyancy Force.
c) Viscosity of Fluid.
d) Specific Gravity of Liquid.

Q4. What is the main function of relay?

a) Sends and receive radio signals.
b) Switches electrical currents.
c) Generate high voltage.
d) Generates electricity.

Q5. What are the causes for a defective supply voltage?

a) Broken Wire.
b) Corroded plug.
c) Defective main fuse.
d) All of the above.

Section – B

03X02 = 06 Marks

Q6. Define the optimum system approach for the system when any kind of electrical faults occur.

Q7. Explain the process of inspecting wiring harness in the vehicles.

Q8. Name any three benefits of using smart charging for an electric vehicle.

Section – C

03X03 = 09 Marks

Q9. Explain the followings:

1. OBD-II Scanning Tool.
2. Automotive Ethernet.
3. MOST (Media Oriented System Transport).

Q10. Explain smart charging process for an electric vehicle.

Q11. Explain Advance Charging System Technology used for an Electric Vehicle with the help of Level 01, Level 02 & Level 03 charging phases.

School of Automotive Skills

Session: 2020-21 (Winter Semester)

B. Voc. Program, 5th Semester,

2nd In-Sem. Examination

Course Code: AUT1502 Time: 1 Hour

Course Name: Automotive Electrical and A.C. Max. Marks: 20

Section – A

05X01 = 05 Marks

Q1. Which of the following topology is used for MOST System?

Answer: a. Star.

Q2. Which of the following system/device is not mandatory to measure a value in the vehicle?

Answer: d. CAN-BUS.

Q3. A hydrometer is used to determine:

Answer: d. Specific Gravity of Liquid.

Q4. What is the main function of relay?

Answer: b. Switches electrical currents.

Q5. What are the causes for a defective supply voltage?

Answer: d. All of the above.

Section – B

03X02 = 06 Marks

Q6. Define the optimum system approach for the system when any kind of electrical faults occur.

Answer:

Step 01:

What — Vehicle model, Engine, Year, Transmission and related Systems

When — Date, Time of the Day, Weather Conditions, Frequency

Where — Road Conditions, Altitude and Traffic Situation

How — System Symptoms, Operating Conditions, Service History and Aftermarket Accessories installed on the vehicle

Step 2:

Operate the system and perform a road test if necessary. Verify all the parameters of the incident and ask the customer to come with you while you perform the road test. You can even ask the client to drive the vehicle so you can sit on the passenger side and monitor

what is happening and make sure the problem is not related to incorrect operation of the vehicle.

If the customer's complaint can't be repeated, jump to "Incident Simulation Tests" section below.

Step 3

Get the materials and equipment required to perform the troubleshooting including a power supply and the system operation descriptions contained in your vehicle's repair manual. If you have access to a TSB software, make sure to look if there's already a technical service bulletin for the same symptoms and problem.

Step 4

Visually inspect the system and look out for damaged wires and possible faulty components. Find which circuit may be faulty and which components could cause those symptoms.

Step 5

If a damaged wire is found, repair the wiring. If not, replace the faulty component.

Step 6

Confirm the repair and make sure no other problems are lurking in the shadows, especially if the problem was a damaged wire. When a wire is damaged because it's rubbing against a sharp metal bracket or part, it's not uncommon to find other damaged wires in the same harness. Perform another road test and make sure everything is fine before delivering the car back to the client.

Q7. Explain the process of inspecting wiring harness in the vehicles.

Answer:

Testing electrical circuits is not that hard if it's approached using a logical and organized method. To make the process as simple as possible, make sure you have all the information on the system to be tested before you begin. Correctly understanding the system operation is also critical to reach a correct diagnosis.

Testing for an open circuit

Whenever testing an electrical circuit, having access to the wiring diagram can make a world of difference. Electrical systems are more complicated now than ever and all cars are built differently. Trying to diagnose an electrical problem without a wiring diagram is basically like trying to find a needle in a haystack. You can always get away with sketching a rough schematic of the system on a piece of paper but unless it's a really simple circuit like back-up lights or the windshield washer system, working without a wiring diagram will make your job a lot more complicated.

1. **Continuity test**

A continuity test is used to find if a circuit is open. Whenever performing a continuity test, set your multimeter to the resistance setting and make sure to always start with your multimeter set at the highest resistance level.

- Disconnect the battery.
- Always start from the fuse and divide the circuit into sections between connectors.
- Disconnect the two sides of each section and test this section for continuity.
- To do that, connect one probe of your multimeter to the terminal on one side and the other probe to the other terminal. Little or no resistance indicates that this section of the circuit is in good working order. If there's an open in the circuit, the multimeter will indicate OL or infinite resistance.

When testing a circuit for continuity, always remember to disconnect all the connectors related to that section. To measure resistance, a multimeter sends a 1V signal through one probe and monitors the voltage coming back on the other side. If any electronic component is still connected to the circuit, it could be damaged beyond repair.

2. Voltage test

As opposed to measuring resistance, measuring voltage doesn't risk damaging expensive electronic components. Consequently, you can only disconnect the connectors you are currently testing.

- On your multimeter, select the voltage function.
- Connect the negative probe of the multimeter to the negative side of the battery.
- Always start the troubleshooting from the fuse. This is the most logical approach since fuses are, more often than not, the cause of a lack of power in a system.
- Disconnect every connector and test for power. If there's power, reconnect it and go to the next connector until the power is missing. The problem is located between this connector and the last one.

Q8. Name any three benefits of using smart charging for an electric vehicle.

Answer:

Benefits of smart charging:

- Reduce grid infrastructure investments.
- Network congestion management.
- Peak shaving.
- Provision of ancillary service.

Section – C

03X03 = 09 Marks

Q9. Explain the followings:

1. OBD-II Scanning Tool.
2. Automotive Ethernet.
3. MOST (Media Oriented System Transport).

Answer:

1. **OBD-II Scanning Tool**

Scan tools are frequently of great help when it comes to diagnosing more complex electrical problems. The live data feature can let you know if an electrical actuator is supposed to be engaged when it's not and if input is coming into a specific module in a glimpse. The possibility to activate specific circuits and perform special tests is also a must.

As a general rule, one could say that the best OBD2 scan tools with the most interesting features are usually the most expensive ones too. Luckily, because of the recent development in technology, you can now find a pretty good OBD2 scan tool even on a low budget.

2. **Automotive Ethernet:**

The Ethernet used in automotive vehicles such as cars is known as **automotive Ethernet**. It is a physical network which is used to connect various components within a car using wired network. This Ethernet type has following features:

- should support High Data Rate without EMI/EMC problems
- should meet latency, synchronization and bandwidth requirements.
- Power should be delivered over Ethernet cables
- should support distributed network architecture for communication
- should work with TCP/IP based protocols.

3. **MOST:**

MOST (Media Oriented Systems Transport) is **a high-speed multimedia network technology optimized by the automotive industry.** It can be used for applications inside or outside the car. The serial MOST bus uses a daisy-chain topology or ring topology and synchronous data communication to transport audio, video, voice and data signals via plastic optical fiber (POF) (MOST25, MOST150) or electrical conductor (MOST50, MOST150) physical layers. MOST technology is used in almost every car brand worldwide, including Audi, BMW, General Motors, Honda, Hyundai, Jaguar, Lancia, Land Rover, Mercedes-Benz, Porsche, Toyota, Volkswagen, SAAB, SKODA, SEAT and Volvo. SMSC and MOST are registered trademarks of Standard Microsystems Corporation ("SMSC"), now owned by Microchip Technology.

Q10. Explain smart charging process for an electric vehicle.

Answer:

- Smart charging means adapting the charging cycle of EVs to both the conditions of the power system and the needs of vehicle users. This facilitates the integration of EVs while meeting mobility needs.
- Smart charging for electric vehicles (EVs) holds the key to unleash synergies between clean transport sector and low-carbon electricity. It minimizes the load impact from EVs and unlocks the flexibility to use more solar and wind power.

KEY ENABLING FACTORS of Smart Charging and EV:

- Charging infrastructure development and deployment
- ICT control and communication protocols
- Define roles and responsibilities of stakeholders
- Design regulation for vehicle-grid integration
- Big data and artificial intelligence for smart charging.

Q11. Explain Advance Charging System Technology used for an Electric Vehicle with the help of Level 01, Level 02 & Level 03 charging phases.

Answer:

- Level 01 Charging:
  - Level 1 charging uses the same 120-volt current found in standard household outlets and can be performed using the power cord and equipment that most EVs come with. Making this type of charging available on your business property is as simple as installing dedicated 120 volt outlets in your company parking lot.
- Level 02 Charging:
  - Level 2 charging uses 240 volt power to enable faster regeneration of an EV's battery system. Providing this type of charging requires installation of an EVSE unit and electrical wiring capable of handling higher voltage power. Plug-in America's Plug Star tools offer a listing of Level 2 EVSE currently on the market. Many utilities are offering free level 2 charging equipment and/or incentives with an electric car purchase. Visit our incentives page to learn more.
- Level 03 Charging:
  - DC fast charging provides compatible vehicles with an 80% charge in 30-60 minutes by converting high voltage AC power to DC power for direct storage in EV batteries. Automakers currently use the same Society of Automotive Engineers (SAE) J-1772 plug for level 1 and 2 charging, with the exception of Tesla which has an adapter. For DC fast charging there are three plug types used by different automakers: the CHAdeMO, SAE Combined Charging System (Combo/CCS), and Tesla Supercharger. Nissan and Mitsubishi vehicles use CHAdeMO while current and upcoming vehicles from US and European manufacturers have SAE CCS ports. Tesla's Supercharger equipment is only compatible with Tesla vehicles, although they offer an adapter which allows Tesla owners to use CHAdeMO equipment.
  - Our electric car fact sheet includes a table with information on DC fast charging plug types by model. Most DC fast charging equipment manufacturers now offer equipment with both the CHAdeMO and SAE CCS port connectors to increase compatibility.

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School of Automotive Skills

Session: 2020-21 (Winter Semester)

B. Voc. Program, 5th Semester,

2nd In-Sem. Examination

Course Code: AUT1503 **Time: 1 Hours**

Course Name: Workshop Management **Max. Marks: 20**

Instruction:

Section – A

5X01 = 5 Marks

Q.1 Reliability engineering covers:

a) Reliability
c) Maintainability
b) Availability
d) All of the above

Q 2. .....is the probability of performing a successful repair action within a given time:

a) Maintainability
c) Reliability
b) Design for Manufacturing
d) FMEA

Q 3. 300 cars have accumulated 45000 hours;10 failures are observed what is the MTBF? What is the failure rate?

a) 4500 hours, 0.00022/hour
c) 450 hours, 0.00022/hour
b) 4500 hours, 0.0022/hour
d) None of the above

Q 4. Which of the followings are characteristics of break-even point?

a) No loss and no profit to the firm
c) Contribution equal to fixed cost
b) Total revenue= to total cost
d) All of the above

Q 5. Given selling price is Rs. 10 per unit, variable cost is Rs. 6 per unit and fixed cost is Rs 5000. What is the break-even point?

a) 500 units
c) 1250 units
b) 1000 units
d) None of the above

Section – B

02X03 = 6 Marks

Q 1. Explain break even concept with neat sketch.

Q 2. Differentiate between forecasting and prediction.

Q.3 Explain concept of zero defect.

Section – C

03X03 = 09 Marks

Q 1. Explain types of forecasting based on methodology.

Q 2. Define reliability and explain bath tub curve with neat sketch.

Q 3. Trial data shows that 105 items failed during a test with a total operating time of 1 million hours. (for all items i.e. both failed and passed). Also, find the reliability of the product after 1000 hours i.e. (t) =1000

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

Registration No.: .....

School of Automotive Skills

Session: 2020-21 (Winter Semester)

B. Voc. Program, 5th Semester,

In-Sem. Examination Answer Key

Course Code: AUT1503 Time: 1 Hours

Course Name: Workshop Management Max. Marks: 20

Instruction: (if any)

Section – A

10X01 = 10 Marks

Q.1 d

Q 2. a

Q 3. a

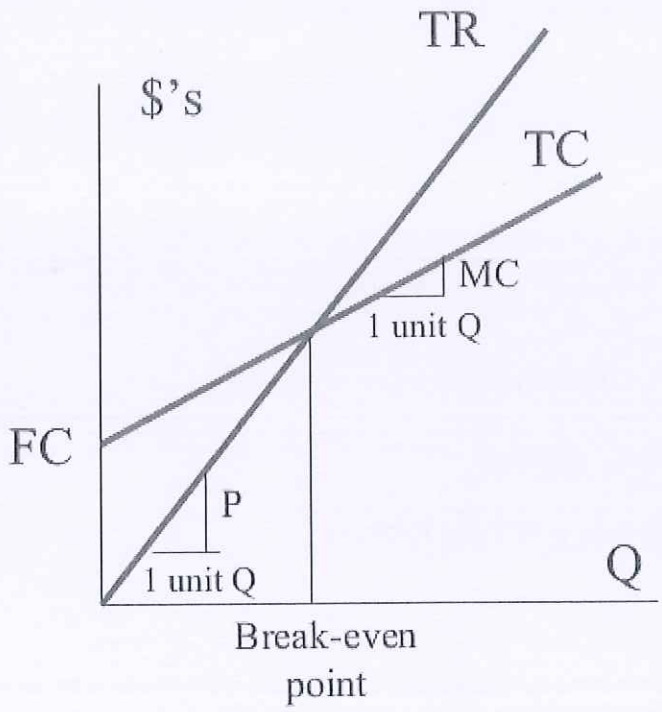
Q 4. d

Q 5. a

Section – B

04X04 = 16 Marks

Q 1.



- Q 2.

S.No	FORECASTING	PREDICTION
1.	Forecasting is an estimate of a future event obtained by systematically combining and casting forward past data in a predetermined way.	Prediction is an estimate of a future event achieved through subjective considerations other than past data; this subjective consideration need not occur in any predetermined way.
2.	It generally involves projection of past into the future.	It takes all relevant information but not the past data.
3.	It is more scientific, largely makes use of statistical and management science techniques.	It is more intuitive, largely makes use of manager's skill, experience and judgment.
4.	It is relatively free from personal bias.	It is governed more by personal bias and preferences.
5.	Error analysis is possible.	Does not contain error analysis.
6.	It is reproducible. Every time nearly same results would be obtained by any particular technique.	It is generally not reproducible.

Q. 3.

Zero Defects, a term coined by Mr. Philip Crosby in his book "Absolutes of Quality Management" has emerged as a popular and highly-regarded concept in quality management – so much so that Six Sigma is adopting it as one of its major theories. Quality management ensures that an organization, product, or service is consistent. It has four main components. These include:

- quality planning,
- quality assurance,
- quality control and
- quality improvement.

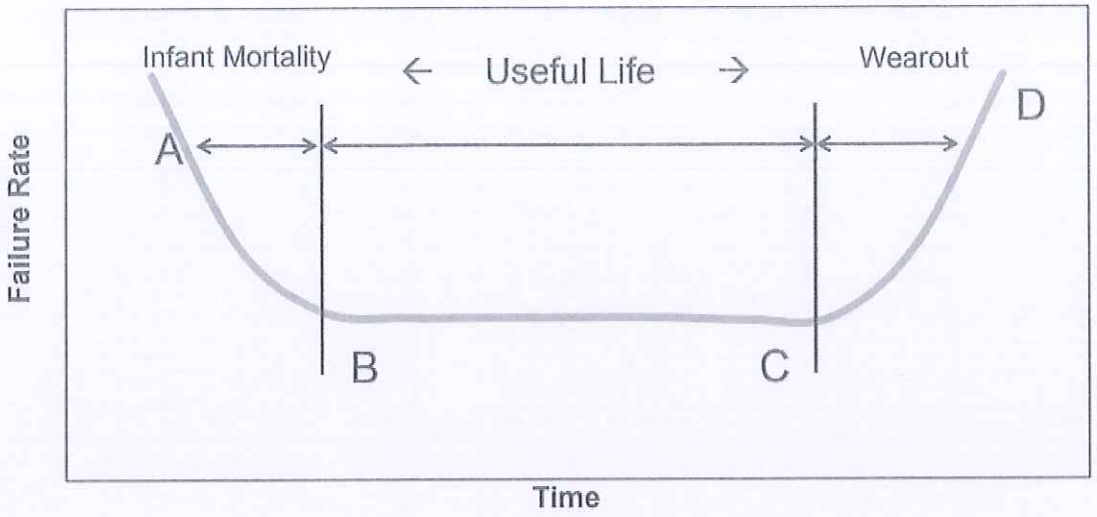
Section – C

04X06 = 24 Marks

Q 1. Qualitative methods and quantitative methods

Q 2. Generally defined as the ability of a product to perform, as expected, over certain time.

The failure rate is expected to vary over the life of a product – ***'Bathtub Curve'***



Q 3.

The failure rate $\lambda = \frac{105}{1000000} = 1.05x10^{-4}$ *per hour*

Reliability at 1000 hours $= e^{-\lambda t}$

R(1000) $= e^{-(1.05x10^{4}\,x1000)}$ = 0.9

Therefore the item has a **90%** chance of surviving for 1000 hours

Ans.

Registration No.: .....

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

School of Automotive Skills

5th Semester, 2nd In-Sem. Examination

B. Voc. Program, Winter Semester (2020-21)

Course Code: AUT1504 **Time: 1 Hour**

Course Name: Paint Shop Management **Max. Marks: 20 marks**

Instruction:

1. Answer all questions from section A, each question carries one mark
2. Answer all question from section B, each question carries two mark.
3. Answer all question from section C, each question carries three mark.

Section – A

05X01 = 05 Marks

Q-1. Which type of special cleaner we used during plastic painting?

a. Anti-static cleaner
b. Degreaser
c. Prepsol
d. None of these

Q-2. Which of the following variables does not affect the drying time of coating?

a. Air flow and movement
b. Surface temperature
c. Type of substrate
d. Solvent selection

Q-3. The best light for color matching is.....

a. Natural day light
b. Fluorescent light
c. Sodium light
d. None of the above

Q-4. Which chemical is found in Hardener?

a. Isocyanate
b. Butane
c. Xylene
d. None of the above

Q-5. Which type of paint is formulated using 1k binder?

a. Solid Paint
b. Metallic paint
c. Pearl Paint
d. Both (b) and (c)

Section – B

03X02 = 06 Marks

Q-6. Write the steps for plastic painting of a new panel.

Q-7. What is the difference between H.S tinter and L.S. tinter?

Q-8. Write the steps for color matching?

Section – C

03X03 = 09 Marks

Q-9. Explain different types of borders used in masking.

Q-10. Discuss about the paint mixing room .

Q-11. Write the process of spot repair using solid color.

Registration No.: .....

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

School of Automotive Skills

5th Semester, 2nd In-Sem. Examination

B. Voc. Program, Winter Semester (2020-21)

Course Code: AUT1504 **Time: 1 Hour**

Course Name: Paint Shop Management **Max. Marks: 20 marks**

Instruction:

1. Answer all questions from section A, each question carries one mark
2. Answer all question from section B, each question carries two mark.
3. Answer all question from section C, each question carries three mark.

Section – A

05X01 = 05 Marks

Q-1. Which type of special cleaner we used during plastic painting?

a. Anti-static cleaner
b. Degreaser
c. Prepsol
d. None of these

Ans (a)

Q-2. Which of the following variables does not affect the drying time of coating?

a. Air flow and movement
b. Surface temperature
c. Type of substrate
d. Solvent selection

Ans (a)

Q-3. The best light for color matching is.....

a. Natural day light
b. Fluorescent light
c. Sodium light
d. None of the above

Ans (a)

Q-4. Which chemical is found in Hardener?

a. Isocyanate
b. Butane
c. Xylene
d. None of the above

Ans (a)

Q-5. Which type of paint is formulated using 1k binder?

a. Solid Paint
b. Metallic paint
c. Pearl Paint
d. Both (b) and (c)

Ans (d)

Section – B

03X02 = 06 Marks

Q-6. Write the steps for plastic painting of a new panel.

Ans:-

- Heat plastic parts for
  60 minutes at +60°C object temperature
- Carefully clean with antistatic cleaner
- Heat plastic parts for
  30 - 40 minutes at +60°C
  object temperature
- Lightly clean parts once more with antistatic cleaner
- Apply 1.5 coats of plastic primer / sealer
- Flash off time 5-10 mins
- Putty
- (for minor damages)
- Mix putty according to TDS and apply
- Drying:
- Air dry- 20-30 minutes at 20°C
- IR – 3 minutes short
- Sanding:
- first sanding
- second sanding
- Primer surfacer
- Blow parts with compressed air, lightly clean once more and wipe with a tack cloth
- mix the primer surfacer
- apply 1 tack coat followed by a normal full coat.
  Clean with degreaser and wipe with a tack cloth; blow part with compressed air (not with wet-on-wet application

- mix the base coat
- apply

a) 2.5 coats for metallic/two stage pearl colors = 15 - 20µm

b) 2.5 coats of under coat followed by 1.5-2 coats of basecoat for three-stage pearl colors = 40 - 45µm

- intermediate flash-off time: 5 - 10 minutes
- flash-off time before clear coat: 15 - 20 min.
- mix clear coat
- apply 1.5 coats of glossy / semiglossy / matt clear coat as per the need

Flash-off

- Oven Bake: according to TDS
- IR Drying: according to TDS

Q-7. What is the difference between H.S tinter and L.S. tinter?

Ans The H.S. Stands for high strength and the pigmentation of the H.S. is very high and we generally used these tinters in the solid paints.

The L.S. Stands for Low strength tinters and the pifmentation of L.S. is very low and generally used for metallic and pearl paints

Q-8. Write the steps for color matching?

Ans:- 1. Inspect the damage.

2. Find the shade card of the color in natural day light.
3. Formulate the color.
4. Apply on flexible panels.
5. Match the panel with vehicle color.
6. If color does not match do the tinting or shading of the color.
7. Repeat the process until color does not match.

Section – C

03X03 = 09 Marks

Q-9. Explain different types of borders used in masking.

- AnsThe area that separates the painted area from non-painted area is called a Border.
- It is important to select the border on the extent of repair and condition of old paint.

Borders for masking :-

1. Borders over gaps between panels.
2. Borders over body sealers.
3. Borders over crests of character lines.
4. Borders on the flat portion of panel

Q-10.Discuss about the paint mixing room .

Ans The value of adding a mixing room where you store all of your paints and solvents is that it keeps the highly flammable liquids used in spray painting properly ventilated and away from the high temps inside of your paint booth.

Regulations limit how many gallons of flammable liquids can be kept inside of your mixing room. The NFPA (National Fire Protection Association) sets most standards for safety regarding paint mixing room configurations.

For instance, if your mixing room is within six feet of your paint booth, you can only store up to 120 gallons of flammable liquids. The maximum any shop can store in their mixing room is 360 gallons. Some of the other codes required for shops utilizing spraying facilities include:

- Limiting the size of your mixing room to 150 square feet
- Ensuring the ability to contain chemical spills within the mixing room
- Maintaining proper ventilation at all times based on the size of the mixing room and exhaust systems
- Classifying electrical zones outside of the mixing room (the same as those for the actual spray booth)
- Installing fire prevention mechanisms like sprinkler systems and fire extinguishers in and around the mixing room

A little known fact about paint booth operations is that the hazardous chemicals used are the number one cause of occupational asthma in the U.S. Mixing rooms use exhaust fans to expel noxious fumes, creating a safer environment for your workers.

Like people who worked in construction decades ago who were poisoned by asbestos which caused lung cancer, too much exposure to Isocyanates contained in paints leads to asthma and other health risks. Surprisingly, the biggest danger of this kind of exposure to workers is not inside of the paint booth but in your mixing room.

Q-11. Write the process of spot repair using solid color.

Ans:- Carefully clean with Prepsol

1. Make sure that the surfacer area is as small as possible.
2. sanding pad using P2000 wet grit paper
3. Blow parts with compressed air, clean with degreaser and wipe with a tack cloth
4. Mix Basecoat as per TDS
5. Apply basecoat:
6. until surfacer (damaged) area is fully covered by overlapping each coat slightly so a "dust zone" remains.
7. Prepare midcoat:-

   67% Binder XB165 and 33% thinner XB387

9 Prepare Blend in:-

Mix 50% Basecoat with 50% Midcoat and reduce pressure during fade out so a smooth transition is achieved

8. Mix clear coat as per TDS
9. Apply 2.5 coats extending basecoat area
10. Blend in:

Mix 50% Clearcoat with 50% Blending thinner and reduce pressure during fade out so a smooth transition is achieved.

11. Apply Blending thinner on over spray area.
12. If repair area is in middle or bigger than A4 size, apply Clear Coat on full panel
13. After drying polish the blend-in areas.