



# BHARTIYA SKILL DEVELOPMENT UNIVERSITY

School of Automotive Skills  
Session: 2021-22 (Winter Semester)  
B. Voc. Program, 5<sup>th</sup> Semester,  
End-Sem. Examination

Course Code: AUT1504

Time: 2 Hours

Course Name: Paint Shop Management

Max. Marks: 50

## Instruction:

1. Answer all questions from section A, each question carries one mark.
2. Answer all questions from section B, each question carries four marks.
3. Answer all questions from section C, each question carries six marks.

## Section – A

10X01 = 10 Marks

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

- |              |                          |
|--------------|--------------------------|
| a. Prepsol   | c. Anti-static cleaner   |
| b. Degreaser | d. None of the mentioned |

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

- |                         |                      |
|-------------------------|----------------------|
| a. Airflow and Movement | c. Type of substrate |
| b. Surface temperature  | d. Solvent selection |

Q. 3 The best light for color matching?

- |                      |                          |
|----------------------|--------------------------|
| a. Natural day light | c. Sodium light          |
| b. Fluorescent light | d. None of the mentioned |

Q. 4 Which chemical is found in hardener?

- |               |                          |
|---------------|--------------------------|
| a. Isocyanate | c. Butane                |
| b. Xylene     | d. None of the mentioned |

Q. 5 Defect in paint arises due to?

- a. Adverse atmospheric conditions
- b. Wrong selection of hardener and thinner
- c. Mistakes during paint application.
- d. All of the above

Q.6. How many angles are required to inspect a color?

- |        |                          |
|--------|--------------------------|
| a. One | c. Three                 |
| b. Two | d. None of the mentioned |

Q. 7 Painter A says: Used thinner & paint material should be stored in a separate tank.

Painter B Says: Do not discard used thinner & paint material in the garbage as these are harmful for the environment.



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Who is correct??

- a. Painter A
- b. Painter B
- c. Both (a) & (b)
- d. None of the mentioned

Q. 8 What is meaning of VOC?

- a. Volatile organic compound
- b. Volatile organic complaint
- c. Volatile organic class
- d. None of the mentioned

Q. 9 Which statement is incorrect related to masking?

- a. Newspaper should be used for masking the Vehicle to be painted.
- b. OPS should use for quick masking.
- c. A Using OPS will save the masking time as compared to brown paper sheet.
- d. Masking prevents vehicle from over spray.

Q. 10 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

04X04 = 16 Marks

- Q. 11 Explain different types of borders used in masking.
- Q. 12 Write the steps for color matching.
- Q. 13 Brief about IR and its application
- Q. 14 Describe all kind of safety standards for paint shop?

### Section – C

04X06 = 24 Marks

- Q. 15 Write the steps for standard repair.
- Q. 16 Discuss about the paint mixing room.
- Q. 17 Make a checklist for spray booth maintenance.
- Q. 18 What are the parameters to considers while paint cost estimate is preparing.



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- c. Pearl Paint
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### Section – B

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Q. 11 Explain different types of borders used in masking.

Ans. The 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. 12 . Write the steps for color matching?

Ans:- Steps for color matching are as follows: -

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.

Q. 13 Brief about IR and its application

Ans.

1. These type of paint drying lamps use infrared technology to maximise the efficiency of the drying and curing process. As a type of electromagnetic radiation, infrared is considered to be one of the most powerful methods of transferring heat.
2. Masking Trolley





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Masking trolley contain all the masking tools and different size of paper and OPS sheet which helps in maintaining 5s

3. DFT Meter

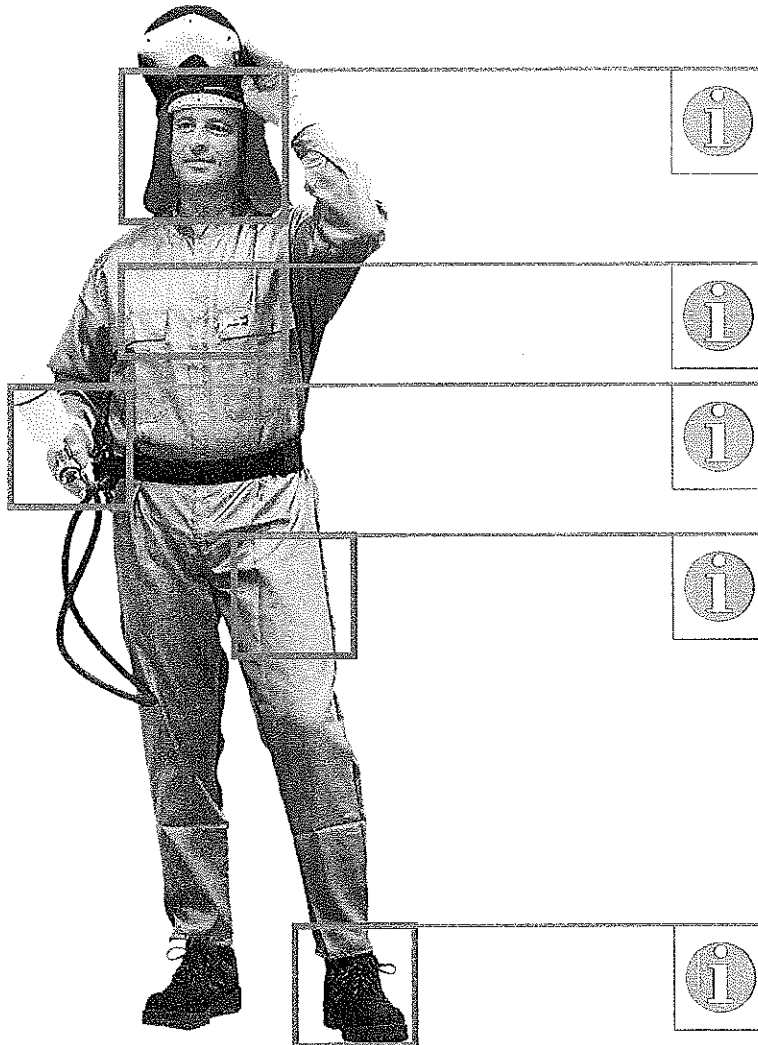
This is a device which is used to measure the paint film thickness. It is generally known as dry film thickness meter

4. Flexi Penal

Flexi panels are used to test the paint according to shade card and paint on the vehicle

Q. 14 Describe all kind of safety standards for paint shop?

Ans. Spray booths should be constructed of steel, concrete, or masonry, and securely and rigidly supported. Interior surfaces should be smooth, continuous, and non-combustible. Sprinklers, visible gauges, and alarms should be properly installed. Booth should be designed to sweep air currents toward the exhaust outlet.



It is easy to be complacent with our personal protection.

Sometimes we think it's too much effort to wear PPE, or that there is no time.

The reality is of course that we cannot overlook any aspect as accidents happen very quickly, often with serious and permanent effects.

Wearing suitable PPE is the last line of protection against unwanted injury or exposure.





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Click on an area for further information or click the button to proceed

## Section – C

04X06 = 24 Marks

Q. 15 Write the steps for standard repair.

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. 16 Discuss about the paint mixing room.

Ans The checkup points for maintenance.

1. Power supply
2. Manometer
3. Cleaning of inside paint booth walls.
- 4, Filter replacement
  - a. Pre filter
  - b. ceiling filter
  - c. floor filter
5. cleaning of dryer units.
- 6 Lubrication
7. Cleaning of blowers.

Q. 17 Make a checklist for spray booth maintenance.

Ans. Checklist For spray Booth Maintenance are as follows:-

1. Check the booth pressure at barometer.





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2. Check Voltage supply.
3. Check the diesel level
4. Check all the filters
5. Check the Lights
6. Check wall glass

Q. 18 What are the parameters to consider while paint cost estimate is preparing.

Ans. . Parameters are as follows: -

1. Paint coverage area
2. Find the shade card of the color in natural day light.
3. Formulate the color.
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## **Section – A**

10X01 = 10 Marks

Q.1 Hue shows the main color.

- a. True
- b. False

Q 2 What are the three things we need during color matching?

- a. Sunlight, Object, Eye
- b. Paint, hardener, clear
- c. Plastic primer, Flexible additive, thinner
- d. None of the mentioned

Q 3 Which instrument is used for measuring intensity of light?

- a. lux meter
- b. lux voltmeter
- c. Intensity meter
- d. Both a & b

Q 4 Painter A says, mixing room must have flash proof lights.

Painter B Says, flash proof light is not mandatory for paint mixing room.

Who is correct?

- a. Painter A
- b. Painter B
- c. Both (a) & (b)
- d. None of the mentioned

Q 5 Secondary colors are the combinations of any two primary colors.

- a. True
- b. False

Q 6 How to create orange color?



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- a. Red- Blue
- b. Red- yellow
- c. Green- Red
- d. None of these

Q 7 What is chroma lusion

- a. The colors in which we see many colors.
- b. The colors we get after the mixing of two secondary colors
- c. Both a & b
- d. None of these

Q 8 What is human visible range to see a color?

- a. 400-700 Nm
- b. 200-300 Nm
- c. 1000-1500 Nm
- d. None of these

Q 9 Volatile Organic Compounds are found in:

- a. Paint
- b. Thinner
- c. Catalyst and hardener
- d. All of the above

Q 10 If you find pin holes in the paint film then what should the possible cause.

- a. Improper cleaning of panel/ vehicle before painting
- b. Due to the moisture and oil in the compressed air
- c. Due to the non-specified flash off time
- d. All of these

### Section – B

04X04 = 16 Marks

Q. 11 What is the difference between H.S tinter and L.S. tinter?

Q. 12 Write the steps for color matching?

Q. 13 Describe all kind of safety standers for paint shop?

Q. 14 Brief about

1. IR Lamp
2. Masking Trolley
3. DFT Meter
4. Flexi Penal

### Section – C

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Q. 15 Write the steps for Spote repair.

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### Section – B

04X04 = 16 Marks

Q. 11 What is the difference between H.S tinter and L.S. tinter?

Ans. AM1 - WHITE - HIGH STRENGTH

AM2 - WHITE - LOW STRENGTH

- Darker in head-on angle
- Lighter in side-on angle
- Darker in near-specular angle
- Change AM1 to AM2 when the concentration of AM1 is less than 0.45% of the total formula weight. When concentration of AM2 is higher than 8%, use AM1
- Change AM1 to AM2: concentration of AM1 x 10

Q. 12 Write the steps for color matching?

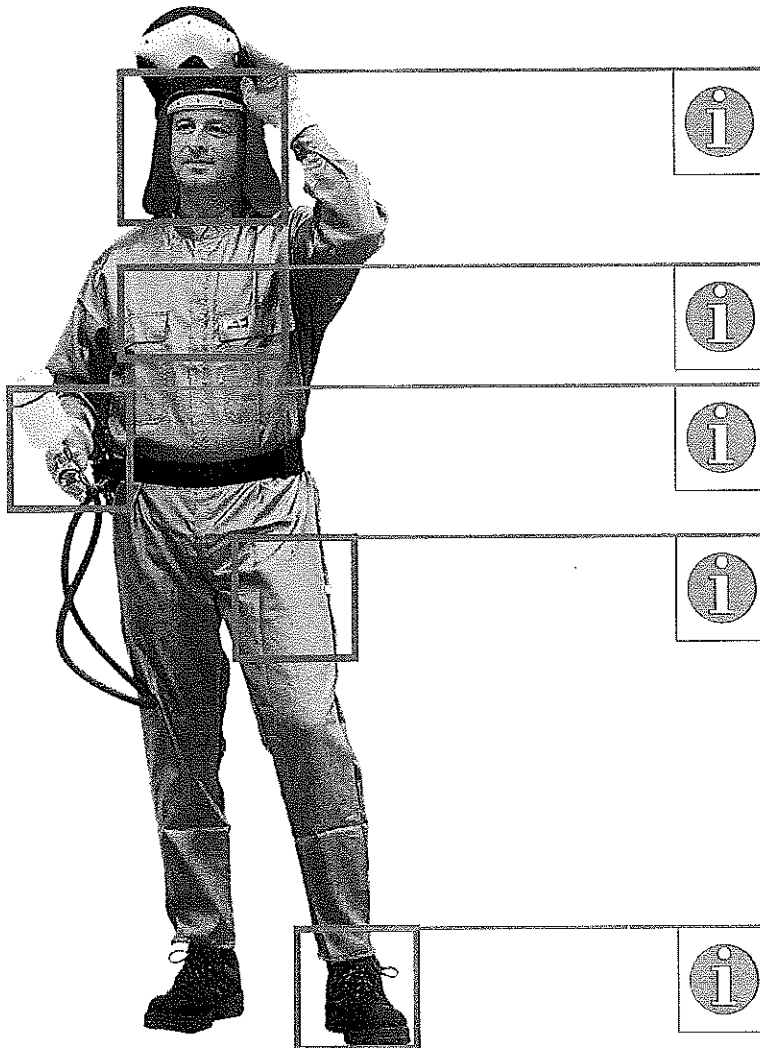


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1. Ans. Accurately select the right colour on the correct area of the car, in a correctly illuminated area (if needed different light sources can be used, in order to achieve the right colour).
2. Use the fan deck with up-to-date colour chips, which must be in good condition.
3. Use a spray gun with correct settings (opening and inlet pressure).

Q. 13 Describe all kind of safety standards for paint shop?

Ans. Spray booths should be constructed of steel, concrete, or masonry, and securely and rigidly supported. Interior surfaces should be smooth, continuous, and non-combustible. Sprinklers, visible gauges, and alarms should be properly installed. Booth should be designed to sweep air currents toward the exhaust outlet.



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Q. 14 Brief about

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3. Masking Trolley  
Masking trolley contain all the masking tools and different size of paper and OPS sheet which helps in maintaining 5s
4. DFT Meter  
This is a device which is used to measure the pain film thickness. It is generally known as dry film thickness meter
5. Flexi Penal  
Flexi panels are used to test the paint according to shade card and paint on the vehicle

### Section – C

04X06 = 24 Marks

Q. 15 Write the steps for Spot repair.

- Ans. Step 1: Pre-Cleaning  
Step 2: Initial Prep Sand the spotted area with P320 and interface pad  
Step 3: Mix and Apply Filler  
Step 4: Sand Filler  
Step 5: Mix and Apply PU Primer Surfacer  
Step 6: Sand the Surfacer with Soft disc  
Step 7: Mix the paint according to the required shade and apply on spot in one and half coat.  
Step 8: Apply clear coat if Required

Q. 16 Describe about the PU paint mixing process.

Ans. Process are as Follows: -

1. Check the shade card
2. Calculate the mixing ratio as per required
3. Mix binder in pot
4. Add Tinters or pigment and thinner if required



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Q. 17 Write the steps for plastic repair.

Ans. Plastic repair Process: -

1. Clean the surface with antistatic cleaner.
2. Sand if required
3. Wet sanding is recommended for non generation of charge on surface.
4. Apply sealer or primer
5. Sand it using interface pad with P 320 grade paper or disc
6. Apply top coat and clear coat with the help of flexible additive.

Q. 18 What are the parameters to consider while paint cost estimate is preparing.

Ans. Parameters are as follows: -

1. Paint coverage area
2. Testing of Paint
3. Viscosity of paint
4. Surface Preparation
5. Rework
6. Time Taken
7. Workforce
8. Electricity cost

