Registration No.: .....

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

School of Automotive Skills

3rd Semester, 1st In-Sem. Examination

B. Voc. Program, Summer Semester (2018-19)

Course Code: AUT1301 **Time: 1 Hour**

Course Name: Automotive power Train **Max. Marks: 20**

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

Direction : Select the one correct option from the given options in the following questions : - **5x1=5 Marks**

Q1. When brakes are applied on a moving vehicle; the kinetic energy is converted to...

a. Mechanical energy
b. Heat energy
c. Electrical energy
d. Potential energy

Q2. Hydraulic brakes function on the principle of...

a. Law of conservation of momentum
b. Law of conservation of energy
c. Pascal's law
d. None of the above

Q3. Full form of ABS is...

a. Anti-lock braking system
b. Anti-skid braking system
c. Both (A) & (B)
d. None of above

Q4. Purpose of brake bleeding is to...

a. Remove the air from the pipe line
a. Fill the Liquid in pipe line
b. Both A & B
c. None of the above

Q5. Compression ratio of an IC Engine is defined as...

a. Total volume/clearance volume
b. Clearance volume/ Total volume
c. Both A & B
d. None of the above

Section-B

3x2=6 Marks

Q-6. What does 5s indicate?

Q-7. What are the differences between wet cylinder liner and dry cylinder liner?

Q-8. Draw the PV diagram of otto cycle and diesel cycle.

Section-C

3x3=9 Marks

Q-9. Explain advantages and disadvantages of dry cylinder liner and wet cylinder liner.

Q-10. Explain the process of general service of a vehicle.

Q-11. Explain MPFI System. What are the advantages of MPFI System?

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School of Automotive Skills

3rd Semester, 1st In-Sem. Examination

B. Voc. Program, Summer Semester (2018-19)

Course Code: AUT1301 **Time: 1 Hour**

Course Name: Automotive power Train **Max. Marks: 20**

Instruction: Attempt all questions.

Section-A

Direction : Select the one correct option from the given options in the following questions : -

5x1=5 Marks

Q1. When brakes are applied on a moving vehicle; the kinetic energy is converted to...

a. Mechanical energy
b. Heat energy
c. Electrical energy
d. Potential energy

Q2. Hydraulic brakes function on the principle of...
a. Law of conservation of momentum
b. Law of conservation of energy
c. Pascal's law
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Q3. Full form of ABS is...
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b. Anti-skid braking system
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a. Remove the air from the pipe line
a. Fill the Liquid in pipe line
b. Both A & B
c. None of the above

Q5. Compression ratio of an IC Engine is defined as...

a. Total volume/clearance volume
b. Clearance volume/ Total volume
c. Both A & B
d. None of the above

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Section-B

3x2=6 Marks

Q-6. Write the full form of 5s.

Ans. 5 S is a workplace organisation that uses a list of five Japanese words.

a. Seiri/sort
b. Seiton/set in order
c. Seiso/shine
d. Seiketsu/standardize
e. Shitsuke/sustain

Q-7. What are the differences between wet cylinder liner and dry cylinder liner?

Ans. **Wet Cylinders liners:**

- Coolant flows directly around liners of this type, thereby providing a good cooling effect. Wet liners can be replaced individually. However, the cylinders' block is not as rigid and is distorted more easily.
- Liners of this type feature a flange at their top end. They must be sealed against the crankcase by sealing rings, since otherwise coolant will get into the crankcase.

Dry cylinder liners:

- These are the slip fit or press fit as thin-walled liners into the cylinder block. Since they do not come into contact with the coolant, the transfer of heat to the coolant is not good as good with wet liners.
- Cylinder liners with a slip fit are finish machined prior to installation.
- Liners with press fit installation are pressed when a predrilled cylinder bore into the cylinder block.

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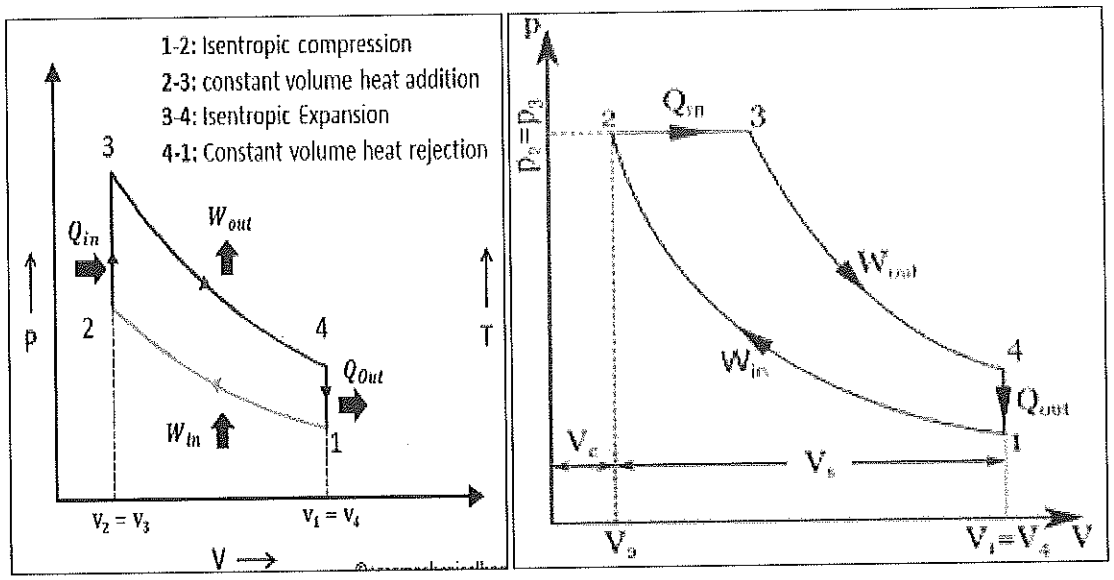
Q-8. Draw the PV diagram of otto cycle and diesel cycle.

Ans.



Section-C

3x3=9 Marks

Q-9. Explain advantages and disadvantages of dry cylinder liner and wet cylinder liner.

Ans. **Advantages of wet cylinder liner: -**

- Easy to manufacture.
- Cooling is more effective.
- Relieved longitudinal stresses due to thermal expansion of the liners.

Disadvantages of wet cylinder liner: -

- The replacement of liner is difficult.
- Danger of water jacket leakage problem.

Advantage of Dry liner: -

- Replacement of dry liner is easy.
- No danger of water jacket problem.

Disadvantage of Dry liner: -

- The cylinder block is complicated and difficult to manufacture.
- Heat dissipation is not very effective.

Q-10. Explain the process of general service of a vehicle.

Ans. The engine service includes:

- Engine oil change
- Oil filter /Air filter change
- Cooling system maintenance
- Spark plug/fuel injector check
- Timing chain service
- Sealing /gasket check
- Internal parts like piston rings, bearings, and valve train components check
- Engine removal and installation

Q-11. Explain MPFI System. What are the advantages of MPFI System?

Ans. The MPFI is a system or method of injecting fuel into internal combustion engine through multi ports situated on intake valve of each cylinder. It delivers an exact quantity of fuel in each cylinder at the right time. There are three types of MPFI systems – Batched, Simultaneous and Sequential.

In the batched MPFI system fuel is injected to the groups or batches of the cylinders without bringing their intake stroke together. In the simultaneous system, fuel is inserted to all cylinders at the same time, while the sequential system injection is timed to overlap with intake stroke of each cylinder.

MPFI includes a fuel pressure regulator, fuel injectors, cylinders, pressure spring and a control diaphragm. It uses multiple individual injectors to insert fuel in each cylinder through intake port situated upstream of cylinder's intake value. The fuel pressure regulator, connected to the fuel rail by means of an inlet and outlet, directs the flow of the fuel. While the control diaphragm and pressure spring controls the outlet valve opening and the amount of fuel that can return. The pressure in the intake manifold significantly changes with the engine speed and load.

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School of Automotive skills

3rd Semester, 1st In-Sem. Examination

B. Voc. Program, Summer Semester (2018-19)

Course Code: AUT1302 **Time: 1 Hour**

Course Name: Automotive wheel care & steering system **Max. Marks: 20**

Instruction:

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

Section – A

Directions: Select any one correct answer from the given options: 05X01 = 05 Marks

Q.1 The range of steering ratio for power steering system in cars.

a) 12-17 b) 19-25

c) 22-33 d) 15-21

Q.2 The full form of EPHS is:

a) Electric power hydraulic steering

b) Electronic pump hydraulic steering

c) Hydraulic power steering system

d) None of the above

Q.3 Select any two tire repairing processes.

a) Plug installation procedure c) Stitching procedure

b) Cold patch installation procedure d) b & c

Q.4 Which one of the following steering system works on sliding mechanism?

a) Ackermann
b) Davis
c) a & b
d) None of them

Q.5 The purpose of steering system is to...

a) To guide the vehicle
b) To stop the vehicle
c) to control the suspension
d) all the above

Section – B

03X02 = 06 Marks

Q.6 Name of different types of steering systems.

Q.7 name the different components of EPS system with the help of a diagram.

Q.8 What is wheel balancing?

Section – C

03X03 = 09 Marks

Q.9 Explain power steering system.

Q.10 Differentiate between Ackermann and Davis steering system.

Q.11 Explain the steps to identify the problems of tires condition.

Q.8 What is wheel balancing and also write types of balancing.

Answer: Wheel balancing, also known as Tyre balancing, is the process of equalizing the weight of the combined tire and wheel assembly so that it spins smoothly at high speed.

1. Static balancing
2. Dynamic balancing

Section – C

03X03 = 09 Marks

Q.9 Explain power steering system and its types.

Answer: A vehicle with proper steering has an energy source that aids the driver in turning the wheels for steering. Most automotive power steering systems are hydraulic. A pump supplies high pressure fluid when the driver turns the steering wheel. This provides most of the required steering effort. Some cars have electronic power steering . An electric motor provides the power assist.

- **Hydraulic power steering system(HPS):** Most power steering systems are basically a manual steering system with a power booster added. This mechanism use power cylinder and piston.
- All hydraulic power steering system work in the same general way
- The energy for steering support is supplied by the drive motor. A high-pressure pump pumps hydraulic oil from a reservoir to a control valve. Depending on whether it was driven in on the right or left, it transfers the working pressure to the sides of a working piston. This supports the movement of the rack or the steering nut.
- After the pressure is released, the hydraulic oil returns to the reservoir. If the working piston is fully extended in one direction at full steering angle, the pressure is reduced via a pressure relief valve to prevent damage. You can tell by a hissing sound.
- **Electric power hydraulic steering system(EPHS):** is similar to **HPS** on major difference is, it use electric power to operate hydraulic pump. Hydraulic Pump not using engine power to operate steering system.
- **Electric power steering system(EPS):** EPS is also similar to hydraulic steering system the only difference is, it use torque sensor and electric motor in place of hydraulic pump. Electric power steering system control by ECM(electronic control module).

The electromechanical power steering is a speed-dependent electric power steering system that only works when required by the driver. (Energy savings of up to 90%

compared to hydraulic power steering). It does not require any hydraulic components. The advantage over hydraulic power steering is that vehicles equipped with it consume less fuel (approx. 0.2l/100Km) and are more ecological (no oil).

Q.10 Write the difference between Ackermann and Davis steering system.

Answer:

ACKERMANN TYPE STEERING GEAR

1.In Ackermann steering gear mechanism is on the back of the wheel axle.

2.It consist only turning pair.

3.Less wear and tear is involved.

4.Less effort is required while turning.

5. Space required is less.

6.Skidding is more compare to davis.

7. Wearing OF tires and skidding effects for analysis is less considerable.

8.It is an approximate steering gear mechanism.

9. Maintenance is simple and low in cost.

DAVIS TYPE STEERING GEAR

1.The Davis steering gear mechanism is on the front of the wheel axle.

2.It consist of turning as well as sliding pair.

3. More wear and tear is involved.

4.more effort is required turning.

5. it require more space.

6.Skidding is relatively less.

7.Effects of wearing and skidding for analysis is more considerable.

8. It is an exact steering gear mechanism.

9. It is high in maintenance complex and cost.

Q.11 Explain how to identify the problems of tires.

Answer:

Identify the Problems: To remove the problem it is necessary to identify the problem and what are the causes of these problems, so there are so many processes to identify problems and the processes are

1. Test drive
2. Visual inspection or sensory inspection
3. Using some measuring or testing equipment's

Tire Inspection and Repair: To find a leak in a tire and wheel, inflate the tire to the pressure marked on the sidewall, and then submerge the tire and wheel in a tank of water. An alternate method of leak detection is to sponge soapy water on the tire and wheel. Bubbles will appear wherever the leak is located in the tire or wheel.

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BHARTIYA SKILL DEVELOPMENT UNIVERSITY

School of Automotive Skills

3rd Semester, 1st In-Sem. Examination

B. Voc. Program, Summer Semester (2018-19)

Course Code: AUT1303 **Time: 1 Hour**

Course Name: Automotive Body Works **Max. Marks: 20**

Instruction:

1. Answer all questions from **"Section-A"**, each question carries 01 mark.
2. Answer all questions from **"Section-B"**, each question carries 02 marks.
3. Answer all questions from "**Section-C**", each question carries 03 marks.

Section – A

Directions: Select any one correct answer from the given options: 05X01 = 05 Marks

1) Serrate head hammers are used for.....
   a) shrinking metal
   b) Panel flattening
   c) Restoring Bodylines
   d) All of the above
2) A slide hammer is used for .....in sheet metal.
   a) Restoring Bodyline
   b) Making Holes
   c) Pulling out dents
   d) None of these
3) .....is used to prevent moister from getting into seams of a car.
   a) Degreaser
   b) Putty
   c) Body filler
   d) Seam sealer
4) ..... is a lightweight, extremely strong, and robust material.
   a) Sheet metal
   b) Diamond
   c) Chassis
   d) Fiberglass
5) .....are typically used for hammer-forming flat sheet metal into custom shapes.
   a) Sliding hammers
   b) Mallets
   c) Shears
   d) Nibblers

Section – B

03X02 = 06 Marks

6) Write the different kinds of tools used in auto bodywork.
7) Where do we use spoons in bodywork?
8) Write the advantages of using sanding blocks.

Section – C

03X03 = 09 Marks

9) Discuss the different categories of body filler.
10) Describe the types of body hammer.
11) Write short notes on:
    a) Seam sealer
    b) Sand paper

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School of Automotive Skills

3rd Semester, 1st In-Sem. Examination

B. Voc. Program, Summer Semester (2018-19)

Course Code: AUT1303 **Time: 1 Hour**

Course Name: Body Repair Technique (Automotive Body Works) **Max. Marks: 20**

Instruction: Attempt all questions.

Section – A

Directions: Select any one correct answer from the given options: 05X01 = 05 Marks

1) Serrate head hammers are used for.....

a) shrinking metal
c) Restoring Bodylines
b) Panel flattening
d) All of the above

Ans: - a)

2) A slide hammer is used for .....in sheet metal.

a) Restoring Bodyline
c) Pulling out dents
b) Making Holes
d) None of these

Ans: - c)

3) .....is used to prevent moister from getting into seams of a car.

a) Degreaser
c) Body filler
b) Putty
d) Seam sealer

Ans: - d)

4) ..... is a lightweight, extremely strong, and robust material.

a) Sheet metal
c) Chassis
b) Diamond
d) Fiberglass

Ans: - d)

5) .....are typically used for hammer-forming flat sheet metal into custom shapes.

a) Sliding hammers
c) Shears
b) Mallets
d) Nibblers

Ans: - b)

Section – B

03X02 = 06 Marks

6) Write the different kinds of tools used in auto bodywork.

Ans: - Basic tools like hammers, mallets, dollies, sanding blocks, spoons, portable grinders and sanders, stud welders and slide hammers, panel flangers, pneumatic tools, chisel, nibblers, clamps, etc.

7) Where do we used spoons in bodywork?

Ans: -

- Designed for used inside hard-to-reach areas.

- Spoons function like a body dolly with a handle.
- Often smaller and thinner than a dolly, they can be used inside of doors, fenders, hoods, or other double wall panels.
- They can also be used for prying panels outward from behind.

8) Write the advantages of using sanding blocks.

Ans: -

- Sanding blocks are commercially available in a wide variety of shapes, styles, size, and materials.
- Sanding can help you to get the best results, but without a sanding block you'll be wasting your time.
- Sanding blocks help you to exert even pressure on the sandpaper, while minimizing waves in the panel being sanded.

Section – C

03X03 = 09 Marks

9) Discuss the different categories of body filler.

Ans: -

- Body fillers are generally a polyester resin based filler with a creme hardener that can be used to even out dents and cover blemishes on vehicles.
- Body fillers all fall into three general categories: standard, mid-range, and premium, and are generally available in a two-part material consisting of a polyester resin and a creme hardener.
- The filler grade you select will depend on the scope of the project and the size of the damaged spots needing to be repaired.
- Standard grade is a great option for minimal hail damage and small rust spots, while premium grade should be used for actual tears or a large surface area.

10) Describe the types of body hammer.

Ans: -

Body hammer come in a variety of shapes, sizes, and uses.

- Those with a serrate head are used for shrinking metal.
- Round heads are used for general panel flattening.
- While square heads are used for restoring bodylines.

11) Write short notes:

a) Seam sealer

b) Sand paper

Ans:-

Seam Sealer

- Seam sealer is used to prevent moister from getting into seams of a car.
- Where two panels join, there is a chance water and moister can get in and start corroding the panels. Therefore, seam sealer is applied to prevent corrosion from happening.

Sand Paper

- Sandpaper and Glass-paper are names used for a type of coated abrasive that consists of sheet of paper or cloth with abrasive material glued to one face.
- Despite the use of names sand or glass, they have been replaced by other abrasives such as aluminium oxide or silicon carbide.
- Sandpaper is produced in a range of grit sizes and is used to remove material from surfaces, either to make them smoother (for example, in painting and wood finishing), to remove a layer of material (such as old paint), or sometimes to make the surface rougher (for example, as a preparation for gluing).
- A small number such as 20 or 40 indicates a coarse grit, while a large number such as 1500 indicates a fine grit.

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School of Automotive Skills

3rd Semester, 1stIn-Sem. Examination

B. Voc. Program, Summer Semester (2018-19)

Course Code: AUT1304 **Time: 1 Hour**

Course Name: Automotive Refinish Painting **Max. Marks: 20**

Instruction: Attempt all questions from section-A and each question carries 1 mark.

2. Attempt all questions from section-B and each question carries 2 marks.

3. Attempt all questions from section-C and each question carries 3 marks.

Section – A

05X01 = 05 Marks

Q-1. What is a solid color?

a. Color having particles
b. Color requires clear coat
c. Color don't have particles
d. None of these

Q-2. What is the recommended intensity of light requires for paint booth?

a. 1000 lux
b. 2000 lux
c. 1500 lux
d. None of the above

Q-3. Which one is the best way of removing the dust particles after putty dry sanding?

a. Air blowing
b. Cleaning with thinner
c. Cleaning with degreaser
d. None of the above

Q-4. What are the primary colors?

a. Red, yellow and blue
b. Green, orange and red
c. Blue, violet and green
d. None of the above

Q-5. Which of the following paint layer is not a part of refinish painting?

a. Electrophoretic dip coat primer
b. Epoxy primer
c. Polyester putty
d. Body filler

Section – B

03X02 = 06 Marks

Q-6. What are unique hues and combination hues?

Q-7. What is HVLP gun? Write down its application.

Q-8. What is Paint? Name different components of paint.

Section – C

03X03 = 09 Marks

Q-9. Explain Hue, Value and chroma.

Q-10. Explain Hue circle diagram.

Q-11. Write down the correct parameters of spray gun handling.

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School of Automotive Skills

3rd Semester, 1st In-Sem. Examination

B. Voc. Program, Summer Semester (2018-19)

Course Code: AUT1304 **Time: 1 Hour**

Course Name: Automotive Refinish Painting **Max. Marks: 20 marks**

Instruction: Attempt all questions.

Section – A

05X01 = 05 Marks

Q-1. What is a solid color?

a. Color having particles
b. Color requires clear coat
c. Color don't have particles
d. None of these

Ans c

Q-2. What is the recommended intensity of light requiring for paint booth?

a. 1000 lux
b. 2000 lux
c. 1500 lux
d. None of the above

Ans a

Q-3. Which one is the best way of removing the dust particles after putty dry sanding?

a. Air blowing
b. Cleaning with thinner
c. Cleaning with degreaser
d. Both (a) and (c)

Ans d

Q-4. What are the primary colors?

a. Red, yellow and blue
b. Green, orange and red
c. Blue, violet and green
d. None of the above

Ans a

Q-5. Which of the following paint layer is not a part of refinish painting?

a. Electrophoretic dip coat primer
b. Epoxy primer
c. Polyester putty
d. Body filler

Ans a

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Section – B

03X02 = 06 Marks

Q-6. What are unique hues and combination hues?

Ans 1.Some hue perceptions appear to be combined from other hues. For example, we perceive that orange combines hue aspects of red and yellow

2. Other hue perceptions appear to be unique or not combinations. For example, green is a unique hue. It is not perceived as a combination of blue and yellow.

Q-7. What is HVLP gun? Write down its application.

Ans . 1. HVLP stands for high-volume, low-pressure.

2. These guns use high volume of air to push the paint through the nozzle.

3. Dilute the paint to make it thinner, and spray from a distance of five to eight inches.

4. It decreases the wastage of paint.

Q-8. What is Paint? Name different components of paint

Ans. Paint is a mixture of different chemicals which gives aesthetic appearance, provides strength, prevent from atmospheric conditions.

Paint is made up of five basic elements: -

1. Binder/Resin
2. Pigment
3. Additives
4. Hardener
5. Solvent

Section – C

03X03 = 09 Marks

Q-9. Explain Hue, Value and chroma.

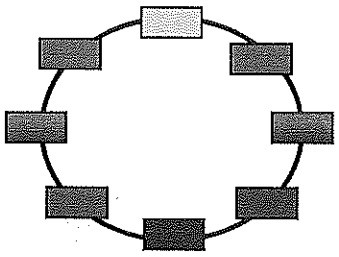
Ans. Hue: - Hue is the most important property of colour as it simply described by simply names of colour. Colour names like red, blue, yellow etc. all are hue names.

Value: - The attribute with which we can classify color on the basis of their lightness and darkness is called value.

Chroma: - The attribute with which we can classify color on the basis of their Brightness and dullness is called chroma.

Q-10. Explain Hue circle diagram.

Ans



White, black and gray are"neutral" colors. They have no hue.Neutral colors are not more related to one hue than to anyother. To show this on the huecircle diagram, we place neutral colors at the center

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Q-11. Write down the correct parameters of spray gun handling.

Ans 1. The angle of gun should be 90 degrees to the panel.

2. The pressure of gun should be 2-3 bar.

3. The distance between the panel and gun should be 5-8 inches.

4. The discharge should be 2.5 rounds of the discharge knob.

5. Overlapping should be 50% in each lap.

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School of Automotive Skills

3rd Semester, 1st In-Sem. Examination

B. Voc. Program, Summer Semester (2018-19)

Course Code: AUT1305 **Time: 1 Hour**

Course Name: Automotive Electrical and Air Conditioning **Max. Marks: 20**

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

Direction : Select the one correct option from the given options in the following questions : - **5x1=5 Marks**

Q1. Ohm's law states that...

a. V=IR
b. I=VR
c. V=I/R
d. None of the above

Q2. The If V=10v and R=5Ω then value of current is...

a. 10 amp
b. 2 amp-meter
c. 2 amp
d. 1 V

Q3. Hydrometer is used to measure...

a. Relative density of liquids
b. Acidity of liquids
c. Weight of liquids
d. All of the above

Q4. Select the correct formula of power...

a. $P=U^2/R$
a. P=I/R
b. P=U/I
c. P=U/R

Q5. A Mulitmeter is used to measure...

a. Voltage
b. Current
c. Resistance
d. All of the above

Section-B

3x2=6 Marks

Q-6. Define frequency. Also write the formula of frequency.

Q-7. A bulb has an output of 60 W at a voltage of 12 V. Find the value current and resistance.

Q-8. Define Electrical Power. What is the unit of power?

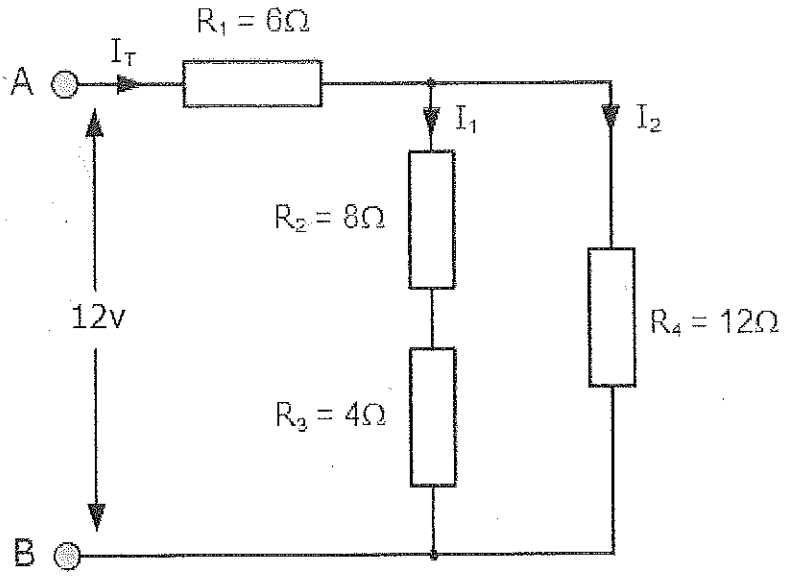
Section-C

3x3=9 Marks

Q-9. Explain the tasks of a starter battery.

Q-10. A wiper motor has a resistor of 4Ω. The on-board voltage in a car is 4.5 Volts. How current is flowing through the windshield wiper motor?

Q-11. In the following circuit calculate the total current taken from the 12v supply.



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School of Automotive Skills

3rd Semester, 1st In-Sem. Examination

B. Voc. Program, Summer Semester (2018-19)

Course Code: AUT1305 **Time: 1 Hour**

Course Name: Automotive Electrical and Air Conditioning **Max. Marks: 20**

Instruction: Attempt all questions.

Section-A

Direction : Select the one correct option from the given options in the following questions : -

5x1=5 Marks

Q1. Ohm's law state that...

- **a. V=IR**
- b. I=VR
- c. V=I/R
- d. None of the above

Q2. The If V=10v and R=5Ω then value of current is...

- a. 10 amp
- b. 2 amp-meter
- **c. 2 amp**
- d. 1 V

Q3. Hydrometer is used to measure...

- **a. Relative density of liquids**
- b. Acidity of liquids
- c. Weight of liquids
- d. All of the above

Q4. Select the correct formula of power...

- **a. $P=U^2/R$**
- a. P=I/R
- b. P=U/I
- c. P=U/R

Q5. A Mulitmeter is used to measure

- a. Voltage
- b. Current
- c. Resistance
- **d. All of the above**

Registration No.: .....

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

Section-B

3x2=6 Marks

Q-6. Define frequency. Also write the formula of frequency.

Ans. The rate per second of a vibration constituting a wave, either in a material (as in sound waves), or in an electromagnetic field (as in radio waves and light).

Q-7. A bulb has an output of 60 W at a voltage of 12 V. What is the current and resistance?

Ans. I = 5amp

R= 2.5 Ω

Q-8. Define Electrical Power. What is the unit of power?

Ans. The electrical power is the result of the voltage multiplied by the current.

Mathematically,

P= V X I

Unit: Watt

Section-C

3x3=9 Marks

Q-9. Explain the tasks of a starter battery.

Ans. These are the following tasks of a battery: -

- Supply the starter with electrical energy during the starting process.
- When the motor is at a standstill, supply the switched on
- Electrical consumers with power.
- Store part of the energy supplied by the alternator.

Q-10. A wiper motor has a resistor of 4Ω. The on-board voltage in a car is 4.5 Volts. What is the current flowing through the windshield wiper motor?

Ans. I = 1.125 Amp

Q-11. In the following circuit calculate the total current taken from the 12v supply.

Ans. I = 1 amp

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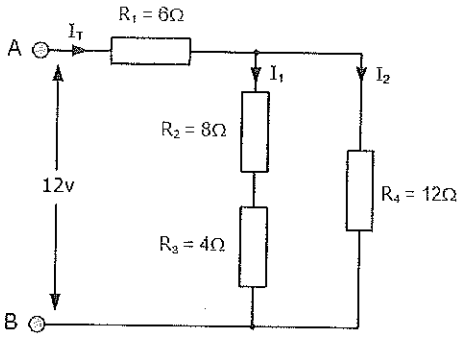

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