BHARTIYA SKILL DEVELOPMENT UNIVERSITY

Registration no.-

School of Metal Construction Skills

1st Semester, 2nd In-Sem. Examination

B. Voc. Program, Summer Semester (2019-20)

Course Code: MCS1103 **Time: 1 Hour**

Course Name: Electrode welding (MMAW) **Max. Marks: 20**

Instructions:

1. Attempt all questions.
2. Use of Calculators is prohibited.
3. Section A contains 05 Questions. Each question carries 1 Marks.
4. Section B contains 03 Questions. Each question carries 2 Marks.
5. Section C contains 03 Questions. Each question carries 3 Marks.

Section- A **01X5= 5 Marks**

Q1. Why must welders use a Welding Helmet?

a) To offer protection from radiation (b) To offer protection from gas

c) To clearly see the welding (d) none of the above

Q2. Tensile strength of electrode E7018 is...

a) 18 psi
b) 70×10^3 psi
c) 70 psi
d) None of the above

Q3. What is the code for MMA Welding?

a) 141 (b) 111
c) 121 (d) 232

Q4. What type of coating is found on electrode E7018?

a) Hydrogen coating
b) Titanium coating
c) Zinc powder
d) Low Hydrogen potassium

Q5. Electrode used in MMA welding is

a) Consumable
b) Non consumable
c) both
d) None of the above

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

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Section- B **02X3= 6 Marks**

Q6. Write the steps for Tack Welding

Q7. Explain what you understand by E6013 & E 7018.

Q8. What do you mean by welding defect?

Section- C **03X3= 9 Marks**

Q9. What is protective equipment? Write name of six protective equipment's used in welding

Q10. Classify weld seam inspection procedure and name three process of each

Q11. Write any three characteristics of electrode covering.

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Answer

Section – A

05X01 = 05 Marks

Q1. Why must welders use a Welding Helmet?

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c) To clearly see the welding (d) none of the above

Q2. Tensile strength of electrode E7018 is...

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Q5. Electrode used in MMA welding is

a) Consumable
b) Non consumable

c) both

d) None of the above

Section- B **02X3= 6 Marks**

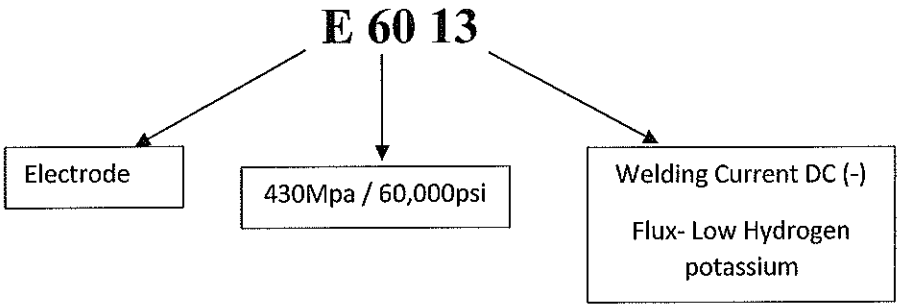
Q6. Write the steps for Tack Welding

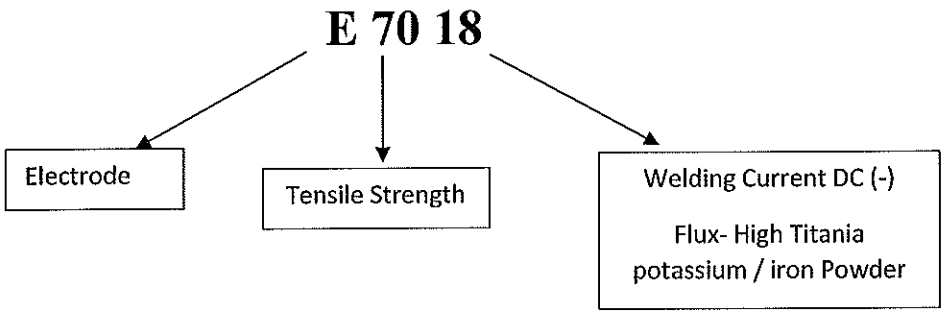
Ans: Steps are:

a. Aligning
b. Clamping
c. Tack

Q7. Explain what you understand by E6013 & E 7018.

Ans:





Q8. What do you mean by welding defect?

Ans: A welding defect is any flaw that compromises the usefulness of a weldment.

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Section- C **03X3= 9 Marks**

Q9. What is protective equipment? Write name of six protective equipment's used in welding

Ans: Accessories that are used to protect the person doing any kind of work. Protective gear used in welding:

a. Holding
b. Gloves
c. Apron
d. Safety shoes
e. Safety glass
f. Ear plug
g. Nose mask (any Six)

Q10. Classify weld seam inspection procedure and name three process of each

Ans: Types of Weld Seam inspection:

A) Destructive	B) Non Destructive
Bend Test	x ray Test
Break Test	Liquid penetration Test
Tensile Test	Ultra-sonic Test
	Magnetic practical test
	Eddy current Test
	Visual Inspection

Q11. Write any three characteristics of electrode covering.

Ans: Characteristics of electrode covering:

1. Provide a protective atmosphere.
2. Stabilize the arc.
3. Provide a protective slag coating to accumulate impurities, prevent oxidation, and slow the cooling of the weld metal.
4. Reduce spatter.
5. Add alloying elements.
6. Affect arc penetration
7. Influence the shape of the weld bead.
8. Add additional filler metal. (any 3)

Sit B

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

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School of Metal Construction Skills

Session: 2019-20 (Summer Semester)

B. Voc. Program, I Semester,

2nd In-Sem. Examination

Course Code: MCS1106 **Time: 1 Hour**

Course Name: Brazing/ Soldering/ oxy-fuel processes **Max. Marks: 20**

Instruction:

1. Attempt all questions.
2. Use of Calculators is Prohibited.
3. Section A contains 05 Questions. Each question carries 1 Mark.
4. Section B contains 03 Questions. Each question carries 2 Marks.
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Section – A

05X01 = 05 Marks

Q.1:- What is the ratio of Oxygen and Acetylene in Neutral flame?

a) 1:2 b) 1:1

c) 2:1 d) 3:1

Q.2:-What is the color-coding for Oxygen cylinder?

a) White b) Green

c) Black c) Maroon

Q.3:- Up to what pressure acetone can absorb acetylene?

a) 19 bar b) 15 bar

c) 2.5 bar d) 0.25 bar

Q. 4:- Which type of flame we can make by Oxy-acetylene process?

a) Oxidizing b) Neutral

c) Carburizing d) a, b, c

Q. 5:- Which joining process require least surface for joining?

a) Welding b) Bonding

c) Soldering d) Brazing

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Section – B

03X02 = 06 Marks

Q.1:- What is the use of flux in brazing? (Any two)

Q.2:- What should be the working pressure for oxygen and acetylene in oxy-fuel brazing?

Q.3:- What is the color-coding for oxygen and acetylene cylinders?

Section – C

03X03 = 09 Marks

Q.1:- Acetylene explodes at 2 bar but we fill this gas in cylinders up to 19 bars. Explain its feasibility.

Q.2:- What is the function of control valve?

Q.3:- Write-down the steps to set the flame.

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Answer Key

Section – A **05X01 = 05 Marks**

Q. 1:- What is the ratio of Oxygen and Acetylene in Neutral flame?

Ans. b) 1:1

Q.2:- What is the color-coding for Oxygen cylinder?

Ans. c) Black

Q.3:- Up to what pressure acetone can absorb acetylene?

Ans. a) 19 bar

Q.4:- Which type of flame we can make by Oxy-acetylene process?

Ans. d) a, b, c

Q.5:- Which joining process require least surface for joining?

Ans. a) Welding

Section – B

03X02 = 06 Marks

Q.1:- What is the use of flux in brazing? (Any two)

Ans.

1. Fluxes improves the flow of filler metal into the brazing gap
2. They also help to ensure a clean metal work-piece surface.
3. Prevents oxidation during the brazing process.
4. The residual oxides are chemically bonded by the flux.

Q.2:- What should be the working pressure for oxygen and acetylene in oxy-fuel brazing?

Ans. Oxygen Pressure = 2.5 bar

Acetylene Pressure = 0.25 bar

Q.3:- What is the color-coding for oxygen and acetylene cylinders?

Ans. Oxygen Cylinder color code = Black

Acetylene Cylinder color code = Maroon

Section – C

03X03 = 09 Marks

Q.:-1 Acetylene explodes at 2 bar but we fill this gas in cylinders up to 19 bars. Explain its feasibility.

Ans. Acetylene explodes when it is compressed to only 2 bars.

Therefore, the maximum allowable pressure for acetylene is only 1.5 bars.

To make it possible, nevertheless, to store larger quantities of acetylene in cylinders, the

acetylene is dissolved in a carrier fluid (acetone).

Under pressure, acetone absorbs large quantities of acetylene. The acetylene is released again

as the pressure falls during gas withdrawal.

In this way, it is possible that, we can safely charge the cylinders to pressures up to 19 bars.

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Q.2:- What is the function of control valve?

Ans. Every gas hose must be equipped with a check valve, so-called, control valve. It ensures that the gas can flow in one direction. In addition, the control valve has a barrier made of sintered metal, which intercepts torch flash backs before they can reach the cylinder.

Q.3:- Write-down the steps to set the flame.

Ans. In order to adjust the flame, the following process steps are necessary.

1. Make sure both pressure regulators are closed after previous use.
2. Slowly open the cylinder valves about one revolution.
3. Set operating pressure on the acetylene and oxygen pressure regulators.
4. First, open torch's oxygen valve.
5. Then, open torch's acetylene valve.
6. Ignite gas mixture.
7. Re-adjust working pressure on pressure regulators.
8. Adjust gas mixture to achieve desired flame.