

MAHARASHTRA STATE BOARD OF SKILL DEVELOPMENT EXAMINATION, MUMBAI

Examination--July, 2020

CERTIFICATE COURSE IN WELDER CUM FABRICATOR

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(BEÚHÉ ~~MOÉ~~—100)

Éab[®]ú (ÉÍÉ+[®]01)

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NÖÖ

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1. (+) $\text{E}^{\text{red}} + \text{E}^{\text{ox}} \rightarrow \text{E}^{\text{red}} + \text{E}^{\text{ox}}$; $\text{E}^{\text{red}} : -$

(1) MPE Éa bOM Eo®iÉÉÉÉ ÉÉa o-É JÉ ÉÉÉÉÉÉ } ÉaÉ ÉÉÉ®iÉÉÉÉ.

(+) $x^2 \in \mathbb{Q}$ (†) $\frac{1}{2} \in \mathbb{Q}$ (E0) $\frac{1}{2} \in \mathbb{Q}$ (b) $\frac{1}{2} \in \mathbb{Q}$

[illegible]

(+) $[\text{E}^{\text{R}}] \text{E}^{\text{b}} \text{E}^{\text{b}}$ (d) $\{ \pm \text{E}^{\text{O}} \} \text{E}^{\text{O}} \text{E}^{\text{b}} \text{E}^{\text{b}}$

(E) xÉÉÉÉ |ÉÉÉ®úÉÉbÉÉÉ (b) É®ÉÉ {ÉÉÉÉ xÉÉÉÉÉ

[illegible]
$$(+) \text{E}^{\text{a}}_{\text{H}} = \text{E}^{\text{a}}_{\text{H}} \text{ b}^{\text{a}}_{\text{H}} + \text{E}^{\text{a}}_{\text{H}} < \text{b}^{\text{a}}_{\text{H}} \quad (4) \quad \{ \text{E}^{\text{a}}_{\text{H}} \text{E}^{\text{a}}_{\text{H}} \} \quad (\text{E}^{\text{a}}_{\text{H}}) + \text{E}^{\text{a}}_{\text{H}} \text{E}^{\text{a}}_{\text{H}} \quad (\text{b}^{\text{a}}_{\text{H}}) + \text{P}^{\text{a}}_{\text{H}} \text{E}^{\text{a}}_{\text{H}}$$

(4) JEE+EO+E {ErüEÖIÉ *éäÉ Éä äÉ ÊÉíÉ³yfa.....

(+) 0¹ab¹0¹ (d) 1¹2¹0¹ (E0) 1¹ab¹ (b) 1¹0¹ 0¹1¹

(5) OFF < Eb ME Eo® iExEE bEz LES EE EObiEiEaEE EE® iEEiE.

[illegible]

(၁၆) **SHILO** E₀ ~~၁~~[®] ~~၁~~[®] $\frac{1}{2}$ (E₀ $\frac{1}{2}$) (HSE) :—

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(1) +HC^oEVEtE E^oEE+Eb[®]SfE[®] III EdE3E +^oEiEEa

(2) 0E0/2EäbSÉ0°É<VÉ°ÉÉÉÉÉ®üÉÉ: ÉäbÜÉÉÉÉ/2ÉÉÉÉÉÉÉÉÉÉÉÉÉÉ /`ÜÉÉÉÉÉÉÉ.

[illegible]
$$(4) \quad x \in \mathbb{Z}_p \setminus \{0\} \implies \frac{1}{x} \in \mathbb{Z}_p \setminus \{0\} \implies \frac{1}{x} \in \mathbb{Z}_p \setminus \{0\} \implies \frac{1}{x} \in \mathbb{Z}_p \setminus \{0\} \implies \frac{1}{x} \in \mathbb{Z}_p \setminus \{0\}$$

(5) $E_{\alpha} \rightarrow \bar{Q} \bar{U} \bar{L} \bar{E} \bar{M} \bar{E} \} \pm E_{\alpha} E_0 \bar{Q} \bar{U} \bar{L} \bar{E} \bar{M} \bar{E} + E_{\alpha} \bar{Q} \bar{U} \bar{L} \bar{E} \bar{M} \bar{E} \bar{Q} \bar{U} \bar{L} \bar{E} \bar{M} \bar{E} + \bar{Q} \bar{U} \bar{L} \bar{E} \bar{M} \bar{E} E_{\alpha}$

(6) $i\epsilon_1^{\frac{1}{2}} + \epsilon_2 p v \epsilon_1^{\frac{1}{2}} + \epsilon_2^{\frac{1}{2}}$

$$[\pm \epsilon] \cup \{\epsilon/2\}$$

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5. $\int_{-\infty}^{\infty} \delta(x) dx = 1$ (Evaluating the integral of the Dirac delta function):—

(+) +EEθ ↔ EEä

(d) $\{E_{\alpha\beta}^{\pm}\} \cap \mathcal{M}_X$

(Eò) bθ°]έ®ηExÉ

(b) $\frac{1}{2}ab + \frac{1}{2}b^2$

(\leftarrow) °Éà] ò ¶ÉVÉ.

6. ~~EdhÉiÉ20nÉÉ~~ | ~~ÉxÉ~~ °ÉÉb:ÉÉ :-

(+) SÉCOURSÉE {Éa-Éa®} OSÉaEd'aÉ nO{ÉÉ®}aÉÉÉ ½ÉaÉÉÉ ?

(d) $E; \partial \pm E^{\otimes} \cup^{\otimes} S^{\otimes} \mid E d^{\otimes} \cup^{\otimes} E \pm E^{1/2} \bar{b}$.

(Eò) MPE ÉabOMES^aÉE {ÉrúÉOÉ ÉabOMÉ }ÏCxEÖ=ÉÉíÉ É+É/É.

(b) $\int_{\pm} \frac{1}{\sqrt{1-x^2}} dx = \pm \arcsin x + C$; $\frac{d}{dx} \arcsin x = \frac{1}{\sqrt{1-x^2}}$ $\frac{d}{dx} \arccos x = -\frac{1}{\sqrt{1-x^2}}$.

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(ENGLISH)

[TIME ALLOWED—3 HOURS]

(MARKS—100)

WELDER (THEORY-I)*Instructions.—* (1) All questions are *compulsory*.**Marks**

1. (a) Fill in the blanks :—

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(i) The most commonly used flame in gas welding is

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- (a) Neutral (b) Oxidising
(c) Carburising (d) All of the above.

(ii) Arc welding is also known as

- (a) Pressure welding (b) Plastic welding
(c) Non-pressure welding (d) None of these.

(iii) In acetylene cylinder the acetylene is dissolved in

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- (a) Carbon dioxide (b) Water (c) Oxygen (d) Acetone.

(iv) Following method melt the base metal is

- (a) Soldering (b) Brazing (c) Welding (d) All of above.

(v) The safety device used to protect eyes while grinding is

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- (a) Hand glooves (b) Apron
(c) Safety goggle (d) All the above.

(b) *True or false (any five) :—*

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(i) The colour of the oxygen cylinder is black.

(ii) Groove weld size is usually specified on the welding symbol.

(iii) A seam weld is a type of arc and gas weld.

(iv) The usual fillet weld has equal less.

(v) Carburizing flame is suitable for cutting operations.

(vi) Copper is ferrous metal.

[Turn over

- (c) Make long form (any *five*) :— 5
- | | | |
|------------------|--------------|----------------|
| (i) S. M. A. W. | (ii) D. C. | (iii) A. W. S. |
| (iv) G. T. A. W. | (v) S. A. W. | (vi) M. I. G. |
- (d) Match the pair :— 5
- | 'Metal' | 'Flame' |
|---------------------|-----------------|
| (i) Mild steel | (a) Oxydizing |
| (ii) Brass | (b) Carburizing |
| (iii) Cast iron | (c) Neutral |
| (iv) Stelight | (d) Oxydizing |
| (v) Stainless steel | (e) Neutral. |
2. Attempt any *two* of them :— 16
- (a) Write safety precautions you will take a electric Arc welding process.
- (b) Explain following welding joints with neat sketch (any *two*) :—
- (i) Square butt joint
 - (ii) Corner joint
 - (iii) Pipe butt joint.
- (c) Write down types of oxy-acetylene flame. Explain with sketch.
- (d) Explain various types of polarity with neat sketch.
3. Attempt any *two* of them :— 16
- (a) Write down use and properties common gas used in the gas welding.
- (b) What is the types of welding position ?
- (c) Explain principle of transformer.
- (d) Explain high pressure blow pipe and low pressure blow pipe.
4. Attempt any *two* of them :— 16
- (a) What do you know about Arc length ? Explain with neat sketch.
- (b) What is edge preparation ? Mention its types and advantages.
- (c) Write down principle of Arc welding.
- (d) What do you know about D. C. welding generator ?

5. Write short notes (any *four*) :— 16
- (a) Arc blow
 - (b) Penetration
 - (c) Distortion
 - (d) Welding hand shield
 - (e) Safety shoes.
6. Attempt any *two* of them :— 16
- (a) What is the effect of wrong polarity.
 - (b) Write down the types of filler rod. Write down them briefs.
 - (c) Describe the method of welding technique in gas welding.
 - (d) Write information about flash back and back fire.
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