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MAHARASHTRA STATE BOARD OF SKILL DEVELOPMENT EXAMINATION, MUMBAI

Examination--July, 2020

CERTIFICATE COURSE IN WORKSHOP MACHINE OPERATOR
(FOR VISUALLY HANDICAPPED)[~~१०~~ ३ iEE°E]

(BEhE MhE—100)

E; 0] 0M EEQ: (EIE+ 01)

MhE

1. (+) EnuEa°EE {E°EE°EE EvEhE E°EE°EE VEEMEE jEE°E :-

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- (1) iEaEEO] 0 } ±EEa°u xEa°EE; 0 Eo°MEEIE.
 (+) EEE] ME EE] 0 (E) {EEhE] EEhE
 (E0) EE°u] EEhE (b) EEE°EEbEE + EE°EE< 0 °jEa E0°ME.
- (2) u EEa 0 EE°E (°EEQ±E) EEE°EE°EE 0 jEE EE°EEIE.
 (+) jEE±E (E) EE±EE°u
 (E0) VEhE EEE°EE (E) °GE°EE°u
- (3) jEE±EE°EE (EE0) 1/2 bEE°EE] 0 EE°EE jEE + 1/2
 (+) jEE° °C EE° (E) °] EE° °u±E
 (E0) °] EE° BV E (b) °EE BV E.
- (4) EE°EEGEaEE] 0 iEE EE°EE EEE° E Eo°EEa
 (+) °GE (E) EEa] 0
 (E0) °] EE° (b) xE] 0 + EEhE EEa] 0
- (5) EE°EE 1/2 SEa + ±EE°E + 1/2
 (+) EEE°EE + EEhE] EE (E) EE±EE + EEhE] EE
 (E0) EEE°EE + EEhE EE°EE (b) EEE°EE + EEhE EE°EE ±EE°u
- (6) EE°EEa E0] 0 Eo°EE°EE 0 EE°EE±EE = EE°EE 1/2 EEa
 (+) EEE EE°EE±EE (E) jEE] 0 EE°EE±EE
 (E0) EE°EE ±EE EE°EE EE°EE±EE (b) bEE°EE EE°EE EE°EE ±EE.
- (7) + EE°EE°EE EE°EE = qEE° + 1/2
 (+) EE°EE EE°EE EE°EE EE°EE (E) EE°EE EE°EE EE°EE
 (E0) 1/2 EE°EE EE°EE (b) jEE°EE EE°EE
- (8) j EE°EE bEE°EE {EE<Q] 0 + ME±EE EE°EE + EE°EE + °EEEE
 (+) E0] EE°EE °EE° (E) EE°EE EE°EE EE°EE
 (E0) bEE°EE °EE° (b) bEE° EE°EE EE°EE EE°EE ±EE.
- (9) °EE °GE°EE 1/2 EE°EE + EE°EE + °EEEE
 (+) 1/2 EE°EE±EE (E) °C EE°EE
 (E0) °EE°EE°u (b) jEE°EE°u
- (10) j EE°EE {±EE] 0 EE°EE EE°EE.
 (+) 1/2 EE°EE EE°EE EE°EE (E) jEE°EE EE°EE
 (E0) jEE {EE] 0 (b) EE°EE

[=±E] EE {EE°EE

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‘**É**’, **ME]** ò

(+) 0.5 "É0."É0.

(d) 0.002 °E_a/E₀.

(Eò) 0.02 "ÉÒ."ÉÒ.

(b) 0.01 "E0."E0.

(\leq) 0.001 "ÉÈ. "ÉÈ.

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[illegible]

(2) B' E. B' oE. {+f} of uib l + M Eo i f e x t e o f f a a f f + f k q f 1/2 p Eo } ± a f b : f f (r i f f i f.

(3) $\frac{d}{dt} \left(\frac{1}{2} m v^2 \right) = \vec{F} \cdot \vec{v}$

(4) $\mathbb{J}^{\text{HES}}_{\text{E}^{\text{a}}\text{E}^{\text{a}}} + \text{E}^{\text{a}}\text{E}^{\text{a}} \circ \{\text{E}^{\text{a}}\text{E}^{\text{a}}\}^{\text{R}} + \text{E}^{\text{a}}\text{E}^{\text{a}} + \text{E}^{\text{a}}\text{E}^{\text{a}}$

(5) $\pm \frac{1}{2} E^{\alpha_1 + \alpha_2} = \frac{1}{2} [E_{\alpha_1}, E_{\alpha_2}]$

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(+) È j ò] OM ÈE EEE(È Èv^aEà PÉaE+Èà VÉEhEE® O^oEE.

(ㄹ) ; ㄹ<ㄱㅅㄹ | ㅅㄹ[®] + ㅅㅅㅅ[®] 1/2 ㅅ {ㅅ} ㅅ ㅅ[®].

(Eò) "É] ãÉSªÉE JÉE±ÈÒ±É Ê; òVÈÒÈò±É |ÉE(É] òVÉ °{É¹] ò Eò®É.

(1) $b \in]\frac{1}{2}, 1[$ (2) $\frac{1}{2} \leq b \leq 1$ (3) $\frac{1}{2} \leq b \leq 1$.

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(+) $\text{R}^{\oplus}\text{D} + \pm \text{E} \rightarrow \text{E}^{\oplus}\text{D}$

(♯) xÉÉÍ ÉGÉÉ^aEZÉME +ÉÉhé +KÉāÉÓMÉ^aÉE ½D] ò] D] oÉā S^aÉE ..fāÉb÷ °{¹} ò Eò®.

(Eò) Ê[®]û½ð ðÉä |ÉEä[®]ú °{É¹] ò Eò[®]ú.

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[illegible][illegible]
$$(E_0) + \frac{1}{2} \left(\frac{\partial E_0}{\partial t} \right)^2 = \frac{1}{2} \left(\frac{\partial E_0}{\partial t} \right)^2 + \frac{1}{2} \left(\frac{\partial E_0}{\partial t} \right)^2$$

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$$(+)\quad \frac{1}{2} \text{H}_2\text{X} + \text{H}^+ \rightleftharpoons \frac{1}{2} \text{H}_2 + \text{X}^+$$
$$(d) \quad \pm \epsilon \epsilon' \epsilon'' + \epsilon \epsilon' h \epsilon'' \frac{1}{2} \epsilon \epsilon' \epsilon''$$

(Eò) VÉOMÉ +ÉÉhÉ Ê; òC¶SÉ®ú

(b) j o r e e e

(\langle) {ÉÉÉÉ®ú] Ìx°ÉÉ·É¶ÉxÉ.

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(+) शीट मेटलमध्ये होणाऱ्या ऑपरेशनची आकृतीसह माहिती द्या.

(±) \pm^a $\text{[E]([E])} \tilde{o}$ SĒā MĒĀVĒ'ĒÇ °{[1]} \tilde{o} Eō[®]Ū.

(Eò) mÉòSÉä |ÉEđ[®]ú °{É¹] ò Eò[®]ú.

(b) [±F'É0] q̃ ; à0] q̃] 6 ±[®OÉ a[[o[Æ0±{xÉÉ o{É¹] ò Eò®.

FITTING WORK (THEORY-I)**Marks**

1. (a) Fill in the blanks with given option :—

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- (i) An oily floor should be cleaned by
 (a) Cotton waste (b) Putting water
 (c) Putting sand (d) Spraying carbondioxide.
- (ii) The tool which is used for laying out large circle is
 (a) Trammel (b) Divider
 (c) Jenny caliper (d) Scriber.
- (iii) is a direct measuring tool
 (a) Try square (b) Steel rule
 (c) Straight edge (d) Ring edge.
- (iv) Micrometer work on the principle of
 (a) Screw (b) Bolt
 (c) Stud (d) Nut and Bolt.
- (v) Brass is an alloy of
 (a) Copper and Tin (b) Lead and Tin
 (c) Copper and Zinc (d) Copper and Silver.
- (vi) The chisel used to cut keyway is
 (a) Cope chisel (b) Flat chisel
 (c) Round nose chisel (d) Diamond point chisel.
- (vii) is the main purpose of annealing.
 (a) To improve machinability
 (b) To improve magnetism
 (c) To increase hardness
 (d) To increase toughness.
- (viii) The point angle of twist drill depends upon the
 (a) Cutting speed (b) Type of drilling machine
 (c) Size of the drill (d) Material to be drilled.
- (ix) The head of thumb screw is..... in shape.
 (a) Hexagonal (b) Square
 (c) Circular (d) Triangular.
- (x) Face plate is held at
 (a) Head stock spindle (b) Tail stock
 (c) Tool post (d) Bed.

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Marks

(b) Match the following pairs :—

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'A' Group

'B' Group

(i) Steel rule

(a) 0.5 mm.

(ii) Vernier caliper

(b) 0.002 cm.

(iii) Micrometer

(c) 0.02 mm.

(iv) Vernier height gauge

(d) 0.01 mm.

(v) Vernier outside micrometer

(e) 0.001 mm.

(c) State *true* or *false* :—

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(i) The point angle of twist drill is 118°

(ii) The suitable cutting fluid for drilling M.S. plate is soluble oil.

(iii) The Box nut of Bench vice is made of phosphorous bronze.

(iv) Tool life depends on speed.

(v) Lathe bed is made by cast iron.

2. Attempt any *two* of the following :—

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(a) What are the safety precautions to be observed in fitting workshop.

(b) Explain with neat sketch types of files.

(c) Explain following physical properties of metal :—

(i) Ductility

(ii) Malleability

(iii) Hardness.

3. Attempt any *two* of the following :—

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(a) Explain with neat sketch Radial drilling machine.

(b) Explain heat treatment methods such as Normalizing and Annealing.

(c) Explain types of rivets.

4. Give brief answers (any *two*) :—

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(a) What are the main parts of lathe machine? Explain in detail.

(b) With the help of neat sketch explain various drill angles.

(c) Explain the term abrasive, grit, grade.

5. Write short notes (any *four*) :—

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(a) Vernier height gauge

(b) Lapping and honing

(c) Jig and Fixtures

(d) Ferrous metal

(e) Power transmission.

6. Attempt any *two* of the following questions :—

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(a) Describe with sketch common sheet metal operation.

(b) What are the properties of lubricant? Explain it.

(c) Explain different types of thread.

(d) Explain the term Limit, Fit, Tolerance.