

**MAHARASHTRA STATE BOARD OF SKILL DEVELOPMENT EXAMINATION, MUMBAI**

**Examination--July, 2020**

## CERTIFICATE COURSE IN WIREMAN

[**Ἐ**ϣ—3 iÉ°É]

(BEÚHÉ ~~NÍHÉ~~—100)

# **ÉÉ®ÜXÉ (ÊÉ+®0-1)**

# NÍÐÉ

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1. (+) É®ÉªªÉE VÉÉMÉE ;É®Ú (ÉªªÉÉªª) {ÉÉSÉ} :-

- [illegible]

(4)  $\frac{1}{2} \leq \frac{1}{2} \leq \frac{1}{2}$  (E)  $\frac{1}{2} \leq \frac{1}{2}$  {E} :-

5

- (1)  $\int^a E dV$
- (2)  $\int^a E dV + \int^a E dV \int^a E dV$
- (3)  $\int^a E dV \int^a E dV \int^a E dV$
- (4)  $\int^a E dV \int^a E dV \int^a E dV$
- (5)  $\int^a E dV \int^a E dV \int^a E dV$
- (6)  $\int^a E dV \int^a E dV \int^a E dV$

(Eò) <sup>a</sup>ÉÉ<sup>pa</sup>É VÉÉ<sup>b</sup>É VÉ<sup>3</sup>ÉÉ :-

5

'+' MÉ]õ

‘**ᑭᑦ**’ MÉ] ò

- (1)  $R = R_1 + R_2 + R_3$
- (2)  $S = E + C$
- (3)  $+ E$
- (4)  $I = I_1 + I_2 + I_3$
- (5)  $S = E + W$

(b)  $\mathbb{S}^1 \times \mathbb{S}^1 \rightarrow \mathbb{S}^1 \times \mathbb{S}^1$  (Euler characteristic) :—

5

- [illegible]

$$[\pm \epsilon] \text{ ȳ } \{\epsilon/2\}$$

2. JÉÉ±É0±É(ÉÉ0) EóhÉiáÉÉ½p nñÉ |ÉxÉÉÉÉ0 =kÉ@ tÉ :- 16
- (+) ÉÉÉ@ÖÉ ÉÉÉÉ0 EóhÉiÉ½p +É`ò ÉxÉÉÉÉ É±É½p.
- (É) 0]bóÉ ÉÉÉ@u MÉVÉSá +ÉÉbÉ0É½p ÉhÉÉ É0@.
- (É0) }áÉVÉSá |ÉÉ@u +ÉÉÉ É½p É ÉÉÉÉÉÉ ÉÉÉSá ÉhÉÉ É0@.
- (b) ]Áx°É; áÉÉ@u SÉ0 nñÉ;ÉÉ±É É0É0 PÉÁÉ±É0 VÉÉiá ÉhÉÉ É0@.
3. JÉÉ±É0±É(ÉÉ0) EóhÉiáÉÉ½p nñÉ |ÉxÉÉÉÉ0 =kÉ@ tÉ :- 16
- (+) 0Éá bÉ@É É0@iÉÉÉ PáÉÉ´áÉÉÉ0 É0É½É0 É±É½p.
- (É) VÉxÉ@u Sá MÉÉVÉÉÉ É±É½p.
- (É0) b@.0É0. ÉÉ@u SÉ0 É0ÉÉÉÉÉÉ ÉhÉÉ É0@.
- (b) mé0;áVÉ 0É±ÉÉÉ Sá É0ÉÉ±É ;áVÉ 0É±ÉÉÉ´É@u ;áÉÉnñ É±É½p.
4. JÉÉ±É0±É(ÉÉ0) EóhÉiáÉÉ½p nñÉ |ÉxÉÉÉÉ0 =kÉ@ tÉ :- 16
- (+) É0ÉÉ±É-;áVÉ B. 0É0. ÉÉ@u SáÉÉ +É0ÉÉ(ÉxÉÉ0) ÉbÉ0 É±É½p.
- (É) b@.0É0. ÉÉ@u mé0 (ÉÉ<É0áÉ 0É½p´áÉÉÉá VÉÉbÉá áÉÉÉ0 xÉÉ´ÉxÉnñÉiÉ +ÉÉbÉ0 É0ÉÉ.
- (É0) ;0É0 0{É1}0 É0@-  
 {ÉÉÉ@u ]Áx°É; áÉÉ@u +ÉÉÉ Éb0]áÉÉÉÉ ]Áx°É; áÉÉ@u
- (b) É0b±0 ÉÉÉ@É Sá +ÉÉbÉ0 0É½p ÉhÉÉ É0@.
5. É]ÉÉ É±É½p (EóhÉiáÉÉ½p SÉÉ) :- 16
- (+) {ÉÉ<É +ÉÉÉ
- (É) SÉÉÉ±áÉ É½pÉ0Sá MÉÉVÉÉÉ
- (É0) bÁÉ0ÉáÉ
- (b) SÉÉÉ0Sá |ÉÉ@u
- (<) @ÉÉ±É {±ÉÉ É0ÉÉ ÉhÉá
6. JÉÉ±É0±É(ÉÉ0) EóhÉiáÉÉ½p nñÉ |ÉxÉÉÉÉ0 =kÉ@ tÉ :- 16
- (+) ;0É0 0{É1}0 É0@-  
 ´ÉááÉ É0b±0 +ÉÉÉ {É0. ½p. 0É0. É0b±0
- (É) ]Áx°É; áÉÉ@u SÉ0 +ÉÉ ±Éb±É´É´ÉÉ0 ´É½pÉ0 É±É½p.
- (É0) É0´@É 0ÉÉ0]0 ´ÉVÉ0±É ÉÉÉ]0 ÉÉÉ0]0 SÉÉ {É@ÉÉ´É É±É½p.
- (b) 0Éb±0´É ´É@u ±Á(ÉSá +ÉÉbÉ0É½p @SÉÉ 0{É1}0 É0@.

**(ENGLISH)**

[ TIME ALLOWED—3 HOURS ]

(MARKS—100)

**WIREMAN (THEORY-I)****Marks**

1. (a) Fill in the blanks (Any *five*) :— 5
- (i) ..... Transformer is use where low voltage is required.
  - (ii) In split phase motor's ..... winding is less turns and thick conductor.
  - (iii) Supply frequency in our country is .....
  - (iv) For decorative wiring ..... type is use.
  - (v) Remove the electron from outer orbit of atom then this atom have ..... Charge.
  - (vi) Melting point of ..... metal, is heigher than other.
  - (vii) Parallel connection of electric resistance effective resistance is .....
  - (viii) The unit of energy in electric circuit is .....
- (b) Write symbols (Any *five*) :— 5
- |                           |                             |
|---------------------------|-----------------------------|
| (i) Fuse                  | (ii) Single pole switch     |
| (iii) Variable Resistance | (iv) Transformer            |
| (v) Wattmeter             | (vi) Tube (Flurosent tube.) |
- (c) Match the pairs :— 5
- | ‘A’ Group                  | ‘B’ Group                                   |
|----------------------------|---|
| (i) $R = R_1 + R_2 + R_3$  | (a) Conctate magnetic energy on both ends.  |
| (ii) Magnetic flux         | (b) Series Connection                       |
| (iii) Bad-Conductor        | (c) Imaginary line connect both ends (axis) |
| (iv) $I = I_1 + I_2 + I_3$ | (d) Number of magnetic lines                |
| (v) Magnetic axis          | (e) Parellal connection                     |
|                            | (f) Oppoes to electric supply.              |
- (d) Write *true* or *false* (Any *five*) :— 5
- (i) Single phase supply use for house wiring.
  - (ii) Distance between two sadles in conduit pipe wiring is not more than one meter.
  - (iii) Nickel is use for heating element.
  - (iv) Mechanical energy is converted in electrical energy is called motor.
  - (v) Always ammeter is connected in series.
  - (vi) Voltage = Power  $\times$  Current.

[ Turn over

CON 454

**Marks**

2. Answer the following any *two* questions :— 16
- (a) Write the Electricity rules as eight.
  - (b) Draw and explain standard wire gauge.
  - (c) Write the types and importance of fuse and explain one of them.
  - (d) Explain how to take care and precaution transformer.
3. Answer the following any *two* question :— 16
- (a) Write the precaution when doing soldering.
  - (b) Write the characters of generator.
  - (c) Explain the working principal of d. c. motor.
  - (e) Write the advantages of three phase supply per single phase supply.
4. Answer the following any *two* questions :— 16
- (a) Write the procedure of installation of single phase A.C. Supply.
  - (b) Draw and give names of d.c. shunt motor connection with three point starter.
  - (c) Write the difference between :—  
Power transformer and Distribution transformer.
  - (d) Draw and explain conduit wiring.
5. Write short notes (any *four*) :— 16
- (a) Pipe Earthing.
  - (b) Characters of good conductor.
  - (c) Dry cell.
  - (d) Type of magnets.
  - (e) To fit rawal plug.
6. Answer the following any *two* questions :— 16
- (a) Write the difference between  
Metal conduit and PVC Conduit.
  - (b) Write the information of transformer on load.
  - (c) Write the effect of short circuit in series circuit.
  - (d) Draw and explain sodium vapour lamp.
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