

[१००] [८०००]

MAHARASHTRA STATE BOARD OF SKILL DEVELOPMENT EXAMINATION, MUMBAI

Examination--July, 2020

CERTIFICATE COURSE IN MECHANIC OF INDUSTRIAL ELECTRONICS

[१००]-3 [१०००]

(BETHE MHE-100)

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1000. (1) 1000 1000 1000 1000 1000.

(2) 1000 1000 1000 1000 1000 1000 1000 1000 1000.

(3) 1000 1000 1000 1000 1000 1000 1000 1000 1000.

(4) 1000 1000 1000 1000 1000 1000 1000 1000 1000.

1000

1. (+) 1000 1000 1000 :—

10

(1) 1000 1000 1000 1000 1000 1000 1000 1000 1000.

(+) 1000

(4) 1000

(E0) 1000

(b) 1000.

(2) 1000 1000 1000 1000 1000 1000 1000 1000 1000.

(+) 1000

(4) 1000

(E0) 1000 1000 1000

(b) 1000 1000 1000

(3) 1000 1000 1000 1000 1000 1000 1000 1000 1000.

(+) 1000

(4) 1000 1000

(E0) 1000 1000

(b) 1000

(4) 1000 1000 1000 1000 1000 1000 1000 1000 1000.

(+) 1000

(4) 1000 1000

(E0) 1000 1000

(b) 1000 1000 1000

(5) 1000 1000 1000 1000 1000 1000 1000 1000 1000.

(+) 1

(4) 2

(E0) 3

(b) 4.

(6) 1000 1000 1000 1000 1000 1000 1000 1000 1000.

(+) 1000

(4) 1000 1000

(E0) 1000 1000

(b) 1000 1000 1000

(7) 1000 1000 1000 1000 1000 1000 1000 1000 1000.

(+) 1000

(4) 1000

(E0) 1000 1000 1000

(b) 1000 1000 1000

(8) 1000 1000 1000 1000 1000 1000 1000 1000 1000.

(+) 1000

(4) 1000 1000

(E0) 1000 1000

(b) 1000 1000 1000

(9) 1000 1000 1000 1000 1000 1000 1000 1000 1000.

(+) 0

(4) 1

(E0) 100

(b) 1000.

(10) 1000 1000 < 1000 1000 1000 1000 1000 1000 1000 1000 1000.

(+) 1000

(4) 1000

(E0) 1000

(b) 1000 1000 1000

[1000] 1000

- (ቁ) የተገኘው ስራ ሲሆን ፡— 10
- (1) $0 < B \leq 1$
 - (2) $A \leq 1$
 - (3) $\{0, 1\}$
 - (4) $A \leq B$
 - (5) $A < B$
 - (6) $0 \leq A \leq 1$
 - (7) $B \leq 1$
 - (8) $A \leq B$
 - (9) $\{0, 1\}$
 - (10) $A \leq B$
2. ማረጋገጫው የሚሆንበት ስራ ፡— 16
- (+) የሚሆንበት ስራ ፡—
- (ቁ) የሚሆንበት ስራ ፡—
- (ድ) የሚሆንበት ስራ ፡—
3. ማረጋገጫው የሚሆንበት ስራ ፡— 16
- (+) የሚሆንበት ስራ ፡—
- (ቁ) የሚሆንበት ስራ ፡—
- (ድ) የሚሆንበት ስራ ፡—
4. ማረጋገጫው የሚሆንበት ስራ ፡— 16
- (+) የሚሆንበት ስራ ፡—
- (ቁ) የሚሆንበት ስራ ፡—
- (1) $A \leq B$ (2) $A \leq B$ (3) $A \leq B$ (4) $A \leq B$
- (ድ) የሚሆንበት ስራ ፡—
5. ማረጋገጫው የሚሆንበት ስራ ፡— 16
- (+) የሚሆንበት ስራ ፡—
- (ቁ) የሚሆንበት ስራ ፡—
- (ድ) የሚሆንበት ስራ ፡—
6. ማረጋገጫው የሚሆንበት ስራ ፡— 16
- (+) የሚሆንበት ስራ ፡—
- (ቁ) የሚሆንበት ስራ ፡—
- (ድ) የሚሆንበት ስራ ፡—
- (b) የሚሆንበት ስራ ፡—
- (<) የሚሆንበት ስራ ፡—

(ENGLISH)

[TIME ALLOWED—3 HOURS]

(MARKS—100)

**ELECTRONIC INSTRUMENTATION AND POWER
ELECTRONICS (THEORY-III)**

- Instructions:—* (1) All questions are compulsory.
 (2) Figures to the right indicate *full* marks.
 (3) Answer each next main question on a new page.
 (4) Assume suitable additional data if *necessary*.

Marks

1. (a) Fill in the blanks :—

10

- (i) An ideal regulated power supply has.....regulation.
 (a) Zero (b) Sharp
 (c) Small (d) Normal.
- (ii) SMPS givesvoltage.
 (a) A.C (b) D.C
 (c) A.C and D.C. (d) Variable D.C.
- (iii) A circuit that generates a square wave is called.....
 (a) Integrator (b) Differentiator
 (c) Multivibrator (d) Clipper.
- (iv) If a square wave is applied to differentiating circuit the output is
 (a) Zero (b) Square wave
 (c) Ramp wave (d) Sharp narrow pulse.
- (v) SCR has.....PN junctions.
 (a) 1 (b) 2 (c) 3 (d) 4.
- (vi) In a zener voltage regulator, zener operates in region.
 (a) Active (b) Breakdown
 (c) Saturation (d) Cut off.
- (vii) An ordinary power supply contains.....
 (a) Rectify (b) Filter
 (c) Rectifier and filter (d) None.
- (viii) multivibrator has no stable state.
 (a) Astable (b) Bistable
 (c) Monostable (d) None.
- (ix) When a transistor is driven into saturation the output is
 (a) 0 (b) 1 (c) 100 (d) 1000.
- (x) A JFET is.....polar transistor.
 (a) Uni (b) Bi (c) Tri (d) None.

[Turn over

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Marks

- (b) Give the long form of the following :— 10
- | | |
|-----------|-----------|
| (i) CMOS | (vi) CRT |
| (ii) UJT | (vii) AF |
| (iii) PUT | (viii) RF |
| (iv) UPS | (ix) PMMC |
| (v) JFET | (x) IGBT. |
2. Attempt any *two* of the following :— 16
- (a) Draw the block diagram of Digital multimeter and write its applications.
- (b) Compare BJT and FET.
- (c) With a neat sketch explain the working of universal motor.
3. Answer any *two* of the following :— 16
- (a) With a neat sketch explain the working of astable multivibrator.
- (b) Draw and explain the block diagram of function generator.
- (c) Compare DC ammeter and DC voltmeter.
4. Solve any *two* of the following :— 16
- (a) Explain transistor series voltage regulator with neat circuit diagram.
- (b) Define :—
- (i) accuracy (ii) sensitivity (iii) error (iv) precision.
- (c) Draw the Maxwell's induction bridge with its advantage and disadvantage.
5. Solve any *two* of the following :— 16
- (a) Draw and explain the block diagram of UPS.
- (b) Draw and explain the block diagram of CRO.
- (c) Describe the working of induction motor.
6. Write a short note on the following (any *four*) :— 16
- | | |
|--------------|---------------------|
| (a) SCR | (d) UNIVERSAL MOTOR |
| (b) SMPS | (e) MOSFET |
| (c) INVERTER | |
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