

MAHARASHTRA STATE BOARD OF VOCATIONAL EXAMINATIONS, MUMBAI

Examination, July, 2014

CERTIFICATE COURSE IN ELECTRONIC ASSEMBLY AND T. V. MAINTENANCE

[Ἑβρ—3 iεε°ε]

(BEthÉ NÖÉ—100)

EÖRÖKÉRTÉK (E+®-2)

$$\textcircled{\text{E}}\text{E}\text{E}\text{E}-(1) \text{E}\text{E}\text{E}\text{E}\text{E}\text{E} \textcircled{\text{E}}\text{E} \text{E}\text{E}\text{E} \textcircled{\text{E}}\text{E}\text{E}\text{E}\text{E}\text{E}, \text{E}\text{E}\text{E} \text{E}\text{E}\text{E}\text{E}\text{E} + \text{E}\text{E}\text{E}\text{E}\text{E}\text{E}$$

(2) $= V \epsilon^T \epsilon_0 \epsilon_0^T \epsilon + \epsilon_0 \{ \epsilon^T \epsilon \} M \epsilon_0 \epsilon_0^T \epsilon \epsilon^T \epsilon \epsilon^T \epsilon$.

(3) $+ÉÉ^{a}ÉÈ\ i^{a}ÉÉ\ È\ ÈdÉhÈ\ +ÉÈi^{a}ÉÉ\ ÈdÉfÈ.$

MÉRÉ

1. (+) E^(R)ed^aEÉ VÉÉMÉE |E^(R) :-

10

- [illegible]

(၄) **S&P** ၆၀၀ **Index** **Value** **1/2** :-

10

- [illegible]

$$2. \quad (+) \quad {}^0\hat{E}^{\otimes u}\frac{1}{2}\hat{H}^{\otimes b}\hat{E}<\hat{E} \quad \hat{E}^{\otimes o}\hat{E}'\frac{1}{2}\hat{S}\hat{E}ä\text{ iÉk } \hat{E}' \quad \hat{E}_{\pm}\hat{E}'\frac{1}{2}\hat{f}.$$

4

[illegible]

4

$$(E_0) \oplus_{\pm} E^{\pm}_0 = b^a E^a_0 E^{\pm}_0 + \epsilon^R E^R F M [E^R_0 E^{\pm}_0] \otimes \{E^{\pm}_1\} \otimes E^{\pm}_0.$$

8

3. (+) मर्यादा बंधनोत्पत्ति + विवेक CD {प्रत्येक विवेक Eo. 4
(+) AM ०६६ मर्यादा बंधनोत्पत्ति Edf. 4
(Eo) I F "बोधव्यवस्था T.V.÷]मर्यादा]०६६ + विवेक Edf. विवेक Eo. 8
4. (+) {मर्यादा + बंधन [०६]०६ (Hi Fi) SFO ०६६ ०[६]० Eo. 8
(+) T.V. [०६]०६ बंधनोत्पत्ति Edf. विवेक Eo. 8
5. (+) ०६.०. {प्रत्येक + विवेक Edf. विवेक विवेक Eo. 8
(+) + विवेक Edf. Eo. ०]०६६ विवेक Edf. Edf. 8
6. (+) <प्रत्येक]मर्यादा मर्यादा "मर्यादा Edf. ? E + विवेक ०६६ "मर्यादा]०६६ विवेक + विवेक [०६]०६ Edf. विवेक Eo. 8
(+) T.V. "मर्यादा + विवेक मर्यादा Edf. ? विवेक + विवेक Edf. Edf. ०६६ Edf. 8
7. रेडीओ रिसिक्लर दुरुस्त करताना येणाऱ्या त्रुटी व त्यावरील उपाय सांगा :- 16
(+) ०६६ + विवेक Edf. Edf. Edf. Edf. ०६६
(+) विवेक {प्रत्येक + विवेक Edf. + विवेक
(Eo) विवेक + विवेक Edf.
(b) ०६६ ०]मर्यादा + विवेक.
(<) + विवेक xdf, विवेक xdf, xdf < xdf.
(i) BEdf ०]मर्यादा Edf. Edf. Edf. + विवेक
(M) विवेक ०६६.
(%) बंधन Edf. विवेक BEdf ०]मर्यादा + विवेक + ०६६.
8. T.V. दुरुस्त करताना येणाऱ्या त्रुटी व त्यावरील उपाय सांगा :- 16
(+) ०६६ + विवेक {प्रत्येक Edf. Edf. + विवेक xdf.
(+) विवेक Edf.
(Eo) BEdf ०६६ xdf.
(b) ०६६ + विवेक xdf, Edf. xdf, + विवेक xdf.
(<) Edf. ०]० + विवेक.
(i) Edf. Edf. = "मर्यादा
(M) ०६६ + विवेक xdf, Edf. xdf, {प्रत्येक + विवेक + विवेक
(%) ०६६ Edf. + विवेक + विवेक {प्रत्येक Edf. xdf.

(ENGLISH)

[TIME ALLOWED — 3 HOURS]

(MARKS — 100)

COMMUNICATION SYSTEM (THEORY-II)

Instructions.—(1) Solve any six questions, including question No. one which is *compulsory*.

(2) Figures to the right indicate *full* marks.

(3) Illustrate your answers with neat sketches, wherever necessary.

Marks

1. (a) Fill in the blanks :—

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- (i) AM , FM and are the types of modulation used in communication system.
- (ii) Separation of carrier and modulating signal is called as
- (iii) Receiving Antenna converts radio wave into
- (iv) AM station has standard bandwidth of
- (v) LCD consumes power than LED.
- (vi) The channel bandwidth in TV as per CCIR is MHz.
- (vii) An Amplitude modulator performs the mathematical operation of
- (viii) CD stands for
- (ix) is used to control of TV receiver from distance.
- (x) is the process of recovering audio signal from the modulated wave.

(b) State whether the following statements *true* or *false* :—

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- (i) The processes of superimposing amplitude on the carrier wave is called Modulation.
- (ii) Amplitude modulation gives noiseless reception.
- (iii) Oscillator produces carrier wave.
- (iv) The video voltage at the blank level cuts-off beam current in the picture tube.
- (v) Raster is vertical area scanned by the picture.
- (vi) In Television system video signal is frequency modulated.
- (vii) In TV receiver audio and video signals are amplified.
- (viii) IF amplifier is also called as fixed frequency amplifier.
- (ix) AM receiver are used for M W band.
- (x) In communication system varies channel modulator signals are combined through multiplexing with the help of TDM and FDM technique.

[Turn over

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|----|---|----|
| 2. | (a) Explain the principle of superheterodyne receiver in short. | 4 |
| | (b) Explain working of TRF receiver with the block diagram. | 4 |
| | (c) With the help of block diagram. Explain F.M. receiver. | 8 |
| 3. | (a) Explain with the block diagram of C.D. Player. | 4 |
| | (b) Draw a block diagram of AM set. | 4 |
| | (c) Draw a block diagram of IF modulated TV Transmitters and explain in brief. | 8 |
| 4. | (a) Explain the construction of Public Address System (Hi Fi). | 8 |
| | (b) Draw a block diagram of TV receiver and explain it in brief. | 8 |
| 5. | (a) Draw a block diagram of CD player and explain each section in brief. | 8 |
| | (b) With the help of diagram. Explain the principle and working cassette tape-recorder. | 8 |
| 6. | (a) What is Electron Gun in picture tube ? With the help of neat sketch explain magnetic deflection system. | 8 |
| | (b) What is need of antenna in TV set ? Explain the construction and working of dish antenna. | 8 |
| 7. | Illustrate the causes and remedies, while repairing radio receiver :— | 16 |
| | (a) Volume goes down during the operation. | |
| | (b) Hum at full volume. | |
| | (c) Battery life becomes very short. | |
| | (d) Noisy reception at all stations. | |
| | (e) No sound, No hum, No noise. | |
| | (f) Weak signal at station to the one end. | |
| | (g) Noise on all stations. | |
| | (h) One station heard over the entire dial. | |
| 8. | Illustrate the causes and remedies, while repairing and maintenance TV receiver :— | 16 |
| | (a) Raster normal but no picture and no sound. | |
| | (b) Weak colour. | |
| | (c) No colour. | |
| | (d) No raster, No picture and No sound. | |
| | (e) Insufficient contrast. | |
| | (f) Blooming in picture. | |
| | (g) No raster, no picture but normal sound. | |
| | (h) Raster and sound normal but no picture. | |
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