

MAHARASHTRA STATE BOARD OF SKILL DEVELOPMENT EXAMINATION, MUMBAI

Examination—July, 2020

CERTIFICATE COURSE IN RADIOLOGY TECHNICIAN

[१२]—3 iEE[

(BEthE MthE—100)

VExE@uE + iEE] 6E0 + hb÷ + iEE] 6E0 + Eò ½] 6 (EiE+®01)

MthE

10

1. (+) E@E@uE VEEuE iEE] (E@E@uE ½] nE) :-

- (1) EExE@uE (E½] aEE EECaEE+EE +oEa ½] iEEiE.
- (2) EiE@uE ESE(E@E@uE oE@EiE Enu@ESa + M@u <iEEò + oEia
- (3) (E@E@uE E@E@uE xE@EiEa
- (4) VExE@uE E@E@uE E@E@uE E@E@uE E@E@uE E@E@uE E@E@uE E@E@uE
- (5) E@E ¾n@ESa, (E@E@uE, ½] iEEiE.
- (6) ¾दयाच्या स्नायूंना रक्तपुरवठा करणाऱ्या धमन्यांना +oEa ½] iEEiE.
- (7) , E@E@uE , ½] iEEiE oE@E <iEEò + E½]
- (8) E@E BC@E-@u E@E@uE ¾n@E ½] E@E VEEiEa
- (9) iEE@uE ¾n@E MthE iEEiE E@E@uE <iEEò + oEia
- (10) E@E @E + EiEb@ESa E@E@uE <iEEò + oEia
- (11) 'b@E@E@E 6@E p@E@EiE , E@E@uE ½] , ½] iEEiE E@E@uE E@E@uE
- (12) (E½] aEE oEiE E@E@uE ½] E@E VEEiEa

(E) JEE+@uE VEEb@E VEEyEE :-

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' + ' ME]ò

' E ' ME]ò

- | | |
|----------------------------|--|
| (1) +] pEE (Atria) | (+) EME E@E@uE (leg) + EiE@uE EEEV@Ea ½] b÷ |
| (2) ½] E@E@uE (Ventricles) | (E) E@E@uE@E@E oE@E@E iEE@E@E E E@E@uE ½] b÷ |
| (3) E½] E@E@uE (Fibula) | (Eò) ¾n@ESa E@E@uE EEEV@Ea E@E@uE |
| (4) E½] E@E@uE (Tibia) | (b) EME E@E@uE (leg) E@E@uE EEEV@Ea ½] b÷ |
| (5) E½] E@E@uE (Femur) | (<) ¾n@ESa JEE+@uE EEEV@Ea E@E@uE |

(Eò) JEE+@uE oE@E@uE (E@E@uE oE@E@uE E@E@uE (E@E@uE) (E@E@uE) :-

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- (1) E.C.G.
- (2) W.B.C.
- (3) T.L.C.
- (4) C.N.S.
- (5) C.V.S.
- (6) P.N.S.

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2. $J_{E \pm E_0 \pm E(E_0)} E_0 h E_1^{a E_1/2} n_{E_1} |E_1 x E_1| = k E_0^R \hat{E} \pm E_1/2 :-$

(+) $\text{BC}^{\text{OÉ-®}} \text{ä S}^{\text{aÉÉ}} \text{E}^{\text{öChÉi}^{\text{aÉÉ}}/2} + \text{É}^{\text{`ö}} | \text{ÉÉ}(\text{É})^{\text{ÖVÉ}} (\text{MÉÉVÉ}^{\text{É}} \text{É}) \text{É}^{\text{±ÉV/2}}.$

(㉔) ' bǎi/4ǎi{㉔}® , Sǎ pǎi' éhÉ Èò'Éǎ iÉ'ǎi{㉔}ú Èǎ'Éǎ VÉÉiǎ ?

(Eò) UíiÈÒSÉE È{ÉVÉ®Ú Eò°ÉE iÉªÉE®Ú ½ÚiÉEä?

(b) °jÉØ-|ÉVÉxÉxÉ °ÉÆ|ÉδÉØ +ÉÉØiÉØ EδÉΓMÉ |ÉÉMÉMÉÉ xÉÉ'Éa tÉ.

3. $J_{E \pm E_0 + E(E_0)} E_0 h E_i^{a(E/2)} n_{E_i} |E \rangle_{X(E,E_0)} = k E^{\otimes a} E_{\pm E/2} :-$

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(+) $\epsilon_i \otimes \epsilon_j \in \text{ker}(\text{d})$, $\frac{1}{2} \text{d}(\epsilon_i \otimes \epsilon_j) = i \epsilon_i \otimes \epsilon_j$ (steps) $\text{ker}(\text{d}) \in \text{affine } \mathbb{R}^{+1/2}$.

(१६) अंधाच्या खोलीचे (dark room) $\text{Ex} \rightarrow \text{E} \rightarrow \text{E}$ $\text{E} \rightarrow \text{E} \rightarrow \text{E}$?

(Eò) $\frac{3}{4}n\alpha^2 E^a E^E + E^i E^O \pm E^j E^M E^E E^O \otimes E^E E^E E^E \pm E^E \frac{1}{2} E^E$.

(b) {ÉSÉxÉ°ÉÆ |ÉSÈ) Èd^aÉæ ÈòhÉÈòhÉíÈ) ?

4. $\mathbb{J}(\mathbb{E} + \mathbb{E}0 + \{\mathbb{E}\mathbb{E}0\}) \in \mathcal{O}(\mathbb{H}^1)^{a(\mathbb{E}1/2)} \cap \mathcal{N}(\mathbb{H}^1) \mid \mathbb{J}(\mathbb{H}^1) \mathbb{I}(\mathbb{E}0) \in \mathcal{O}(\mathbb{H}^1) = \mathcal{K}(\mathbb{R}^n) \mathbb{E} + \mathbb{E}1/2 :-$

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(+) [®] CŏÉÉSÈÒ Eð^aEæ Eð^hÉEð^hÉiÈÒ ?

(d) BC⁰-[\tilde{g}] + $\tilde{t}\bar{\tilde{t}}$ S \tilde{E}^0 SEx \tilde{E}^0 + E \tilde{E}^0 b \tilde{E}^0 $\tilde{E}^{1/2}$ \tilde{E}^0 $\hat{E}_{\pm \tilde{E}^{1/2}}$.

(Eò) BC^OE-® ã ÈÈÈÈÈSªÉE , ¶[® ÈÈÈÈÈZÉ“È , ÈÈÈÈÈÈ È±È½¶.

(b) $\frac{3}{4}n \leq \text{aff} \leq \frac{1}{2}n$, $\text{aff} \leq \frac{1}{2}n$ and $\text{aff} \leq \frac{1}{2}n$.

5. $\int_{-1}^1 (1-x^2) e^{x^2} dx$ **SEE WE U E]** **SEE E ± 1/2** :-

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(+) [®]ibBqEx{ÉÉ°ÉÉÉ ÉSÉÉÉ É Eò[®]in^aÉÉSÉò °ÉÉvExä

(d) $\langle \text{EVE} [\text{b}^\circ] \rangle_{\text{EVE}}$ (Image distortion)

(E0) Εἰς τὴν ἑκκλησίαν (Film identification)

(b) ~~FOUO~~ (Safe light)

(\leq) $\pm \frac{1}{2} \times \dots$

6. JEE+È0+E(Eè) EèhEi^aE½) nñE |ÉqxESE0 =kE®à È+È½) :-

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$$(+)\quad \eta^{\circ} \epsilon x^{\circ} \epsilon A I \delta \epsilon \bar{a} + \epsilon^a \epsilon^{\epsilon} \hat{\epsilon}_{\pm \epsilon^{1/2}}.$$

(f) OEOB = "Häufigkeit der Ereignisse? i.e.S. Häufigkeit der Ereignisse? i.e.S. Häufigkeit der Ereignisse? i.e.S. Häufigkeit der Ereignisse?"

(Eò) Eò'É] òiÉ0±É ½bä Ê±É½b.

(b) ÊÊËÊ Æ½þ°¾ÊÆ°Ê (Biliary tract) SÈÒ®SÆÊÊ Æ±Æ½þ.

(ENGLISH)

[TIME ALLOWED—3 HOURS]

(MARKS—100)

GENERAL ANATOMY AND ANATOMY OF HEART (THEORY-I)**Marks**1. (a) Fill in the blanks (any *ten*) :—

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- (i) First cervical vertebra is known as
- (ii) The distance of safelight from working bench is
- (iii) cells are non-nucleated.
- (iv) For protection of gonads from radiation is used.
- (v) is called as pacemaker of heart.
- (vi) The arteries which supply the blood to heart muscles are named as
- (vii) Carpal bones are in number.
- (viii) is the heart of X-ray machine.
- (ix) The normal heart rate is per minute.
- (x) The length of large intestine is
- (xi) is the preservative used in developer solution.
- (xii) First seven ribs are called as

(b) Match the pairs :—

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' A ' Group**' B ' Group**

- | | |
|-----------------|--|
| (i) Atria | (a) Medical bone of leg |
| (ii) Ventricles | (b) Strongest and longest bone in body |
| (iii) Fibula | (c) Upper chambers of heart |
| (iv) Tibia | (d) Lateral bone of leg |
| (v) Femur | (e) Lower chambers of heart. |

(c) State the long form (any *five*) :—

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- (i) E.C.G.
- (ii) W.B.C.
- (iii) T.L.C.
- (iv) C.N.S.
- (v) C.V.S.
- (vi) P.N.S.

[turn over

2. Answer any *two* of the following :— 16
- (a) Write any eight properties of X-rays.
 - (b) How developer solution is prepared ?
 - (c) How thoracic cage is formed ?
 - (d) Draw and label female reproductive system.
3. Answer any *two* of the following :— 16
- (a) What is film processing ? Write its steps in short.
 - (b) What are the criteria for darkroom ?
 - (c) Write an internal structure of heart.
 - (d) What are the functions of digestive system ?
4. Answer any *two* of the following in brief :— 16
- (a) What are the functions of blood ?
 - (b) Write the structure of X-ray tube with a diagram.
 - (c) Write about the shutter mechanism of X-ray machine.
 - (d) Write about the electrical conduction system of heart.
5. Write short notes (any *four*) :— 16
- (a) Radiation protective devices
 - (b) Image distortion
 - (c) Film identification
 - (d) Safe light
 - (e) Cerebellum.
6. Answer any *two* of the following :— 16
- (a) Enlist the organs of respiratory system.
 - (b) What is Grid ? What are its types ? How will you evaluate Grid ?
 - (c) Enlist the bones of skull.
 - (d) Write the structure of biliary tract.
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