

22403

12526

3 Hours / 70 Marks

Seat No.

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- Instructions* – (1) All Questions are *Compulsory*.
(2) Answer each next main Question on a new page.
(3) Illustrate your answers with neat sketches wherever necessary.
(4) Figures to the right indicate full marks.
(5) Assume suitable data, if necessary.
(6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

- 1. Attempt any FIVE of the following :** **10**
- a) Define transportation Engineering.
 - b) Enlist factors affecting gradient. (Any two)
 - c) State the various types of track maintenance.
 - d) List the types of bridge according to function.
 - e) Define causeway.
 - f) State the use of tunnel.
 - g) Enlist two purpose of tunnel lining.

P.T.O.

- 2. Attempt any THREE of the following :** **12**
- a) State causes of creep. (Any four)
 - b) Draw cross section of double broad gauge track in embankment.
 - c) Define bearing, state any two functions of bearings.
 - d) Explain four types of rail joint.
- 3. Attempt any THREE of the following :** **12**
- a) Define the terms.
 - i) Clear span
 - ii) Afflux
 - iii) Economic span
 - iv) HFL
 - b) Write down types of RCC bridge, explain any one.
 - c) Draw neat sketch of section of bridge.
 - d) State pre and post monsoon inspection. Points to be observed. (any two each)
- 4. Attempt any THREE of the following :** **12**
- a) Explain full face method of tunneling in hard rock method.
 - b) State necessity of providing tunnel shafts.
 - c) Explain routine maintenance and special maintenance are carried out.
 - d) Summarize requirements of railway station. (any four)
 - e) State the factors affecting site selection of bridge.

- 5. Attempt any TWO of the following :** **12**
- a) Explain with neat sketch tilting rails.
 - b) Explain the duties of following members in railway track maintenance.
 - i) Permanent way inspector
 - ii) Gang mate
 - iii) key man
 - c) Explain with neat sketch any two types of fixed bearing.
- 6. Attempt any TWO of the following :** **12**
- a) Explain tunnel ventilation using mechanical method.
 - b) Explain the role of transportation in development of nation.
 - c) Discuss purposes of tunnel lining (any four), state all types of tunnel lining.
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