

INTEGRAL COACH FACTORY, CHENNAI-600 038.

SELECTION TO THE POST OF AME/AWM (GR.B) IN LEVEL-8 OF VII PC SCALES (PRE-REVISED SCALE OF PB-2: RS.9300-34800 + 4800 GP) THROUGH LDCE SELECTION (30% QUOTA)

**PAPER-I**

Dated: 12.01.2017

Maximum marks: 150

**Note:**

- i) Time allowed is three hours plus 10 minutes extra for going through the question paper.
- ii) In case of any difference in the English and Hindi versions, English version will prevail.
- iii) Mobile phones/Electronic gadgets/calculators are NOT allowed.

**PART-A - GENERAL PORTION**

**Max marks: 50**

- (1) Attempt either Question No.1 or Question No.2
- (2) Question No.3 is COMPULSORY
- (3) Out of FOUR attempt any THREE Question No.4, 5, 6 & 7

Q.No.1 – Answer the following – Each question carries 5 marks.

- 1.1 What are A, B & C regions as per Official Language Act? Give one example of each.
- 1.2 When is the Rajbasha Day celebrated every year and why?
- 1.3 What are the documents coming under Section 3(3) of Official Language Act, which are to be issued in bi-lingual form? Give 2 examples.

Marks: 15

Q.No.2

Answer any 15 questions

Answer following questions. Every question carries one mark.

- 2.1 In recently held Olympic Games, give names of Indian sports persons who won medals.
- 2.2 How many planets are there in Solar System?
- 2.3 What do you mean by light year?
- 2.4 What do you mean by gravitation pull of earth?
- 2.5 What do you mean by thermo setting plastics?
- 2.6 What is the chemical formula of water?
- 2.7 What is the use of LITMUS test?
- 2.8 What is full form of LPG?
- 2.9 What do you mean by exothermic and endothermic reaction?
- 2.10 What do you mean by FLORA and FAUNA?
- 2.10 What is the full form of WBC (as related to blood)?
- 2.11 What do you mean by 'TEST TUBE BABY'?
- 2.12 What are the three types of 'LEVER' (show by diagram)?
- 2.13 What is the use of SIPHON?
- 2.14 What is the difference between rolling friction and sliding friction?
- 2.15 What do you mean by SUPERSONIC speed?

Marks: 15

Q.No.3 Arithmetic questions

Every question carries FOUR marks.

- 3.1 A bag has four red balls and two yellow balls. A ball is drawn from the bag without looking into the bag. What is the probability of getting a red ball? Is it more or less than getting a yellow ball?

3.2 A shopkeeper purchased 200 bulbs for Rs.10 each. However, five bulbs were fused and had to be thrown away. The remaining were sold at the rate of Rs.12 each. Find the gain or loss percentage?

3.3 Simplify

$$(a+b)(2a-3b+c) - (2a-3b)c = ?$$

3.4 In a building, there are 24 cylindrical pillars. The radius of each pillar is 28 cm and height is 4 metres. Find the total cost of painting the curved surface area of all pillars at the rate of Rs.8 per metre square.

3.5 There are 100 students in a Hostel. Food provision for them is for 20 days. How long will these provision last if 25 more students join the Hostel?

Marks: 20

Q.No.4 Write short notes on the following: (each carries ONE mark)

- (i) Mobile revolution and its impact on railway working.
- (ii) Women empowerment - Steps taken in ICF.
- (iii) Renewable source of energy – give 2 examples.
- (iv) Name the place in Tamil Nadu where Nuclear Power Station is located.
- (v) High Speed trains – Issues involved.

Marks: 5

Q.No.5 Suggest ways to bring down accidents on Indian Railways. What are the safety features in a coach?

Marks: 5

Q.No.6 Describe the following: (each carries ONE mark)

- (i) Humsafar express
- (ii) Antodaya Coaches
- (iii) Deen dayalu coaches
- (iv) Anubhuti Coaches
- (v) Tejas coaches

Marks:5

Q.No.7 Name any five Production Units working under Ministry of Railway.. Give the State in which they are located along with their product-mix.

Marks:5

**PAPER - I**

**Part B – Professional ability – Total marks: 100**

Attempt any 5 questions. Each question carries 20 marks.

Q.No.1

(a) What are the advantages of Conical rubber Springs and Air Springs over steel coil springs in rolling stock?

Marks: 5

(b) In which stock ICF will be using conical rubber spring and in which location (primary/secondary)?

Marks: 5

(c) In which type of LHB coach, ICF has recently introduced air springs? What do you mean by FIBA? Why it is required in air spring coaches?

Marks: 5

(d) Give a schematic layout of steel coil spring manufacturing plant indicating flow of material from bright bars to finished springs duly indicating location of machines.

Marks: 5

Q.No.2

(a) Describe various stages in the painting of a coach both corten steel as well as stainless steel coach.

Marks: 5

(b) What are the issues involved if ICF has to turn out stainless steel paintless coach?

Marks: 5

(c) What are the guiding principles of IMS? What is the use of anti-graffiti paint?

Marks: 5

(d) Describe the working of paint booth and oven provided in paint shop of Furnishing division. Why it is not being put to use as envisaged. What is the insecticidal paint?

Marks: 5

Q.No.3

- (a) How speed potential of LHB coach can be increased from 160 kmph to 200 kmph?  
Marks: 5
- (b) What is the purpose of skin tensioning of a coach shell? Can it be avoided?  
Marks: 5
- (c) Describe various ways to bring down weight of a coach.  
Marks: 5
- (d) How a high speed electric train set is different from a conventional EMU rake currently being manufactured in ICF?  
Marks: 5

Q.No.4

- (a) What are the different types of interior paneling material in use in ICF? Give relative advantages and disadvantages.  
Marks: 5
- (b) What is the importance of ultrasonic examination of an axle? What is procedure involved?  
Marks: 5
- (c) What are the advantages of 3 phase IGBT based propulsion system over conventional propulsion system? Who are the main suppliers? Which firm is supplying propulsion system for Kolkata Metro, currently under manufacture in ICF?  
Marks: 5
- (d) What has been the outcome of introduction of ERP system in ICF? What difficulties were encountered in switching over to 'on line' job card?  
Marks: 5

Q.No.5

- (a) What do you mean by 'just in time' inventory system? What is ASRS? What is the utility for Stores Depot?  
Marks: 5

- (b) What is the difference between Limited Tender and Special Limited Tender? Under what circumstances they are used? What is PAC? Where it is used for procurement?  
Marks: 5
- (c) Suggest ways to bring down Stores Inventory in ICF. Recently Board has instructed to expeditiously switch over to manufacturing of LHB coaches. What are the different methods to keep inventory under control as a follow up of this instruction?  
Marks: 5
- (d) Suggest methods for improving staff productivity in ICF.  
Marks: 5

Q.No.6

- (a) What do you mean by GPS? Describe its applications with respect to Railways.  
Marks: 5
- (b) Why Railways is providing free wi-fi at Railway stations?  
Marks: 5
- (c) Suggest methods to improve website of ICF.  
Marks: 5
- (d) What are CNC machines? Describe any one of the high productivity special purpose CNC machines in use in ICF.  
Marks: 5

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