

QUESTION BANK FOR AME/AWM LDCE 30% EXAM.

SAMPLE QUESTION - 1

Professional Paper - I

Instructions for Candidates

1. Mobile phones are prohibited inside the exam venue.
2. Please do not write your name/roll no./any mark of identity in any answer sheet except on the flyleaf, as directed by the Invigilator.
3. If any candidate is caught copying or adopting any unfair means, his copy will be seized and candidature cancelled.
4. No candidate will be allowed to leave the exam venue within one hour of commencement, for any purpose whatsoever.
5. The paper comprises of two parts, Section A and Section B. Sec A carries 60 marks and Sec B 90 marks. Please read the directions carefully and attempt.

SECTION A Answer all Questions

Qs1 (a) Expand the following abbreviations: - RRI, SCA, AIDS, LHB, SPART. (05 marks)

(b) Fill in the blanks

- (i) The Hq of the NWR is at \_\_\_\_\_
- (ii) The name of the CRB is \_\_\_\_\_
- (iii) The SCR was born on (DD-MM-YY) \_\_\_\_\_
- (iv) Set up in 1867, the oldest Railway workshop in India is at \_\_\_\_\_
- (v) \_\_\_\_\_ is a UNESCO world heritage railway, inscribed in 2000. (05 marks)

Qs 2 Find the average frictional force required to stop a car, weighing 5000 kg, in a distance of 25 m, if the initial speed is 72 KMPH. (18 marks)

OR

A load of 10kg is suspended by a metal wire, 3m long, having a cross sectional area of 4 sq mm. Find-

- (a) The Stress
- (b) The Strain
- (c) The Elongation.

Young's Modulus of the metal is  $20 \times 10^{10}$  N per sq m.

Qs 3 (a) If you jump bare footed on a hard surface, your legs get hurt. But they are not injured if you jump on a soft surface, like sand or a pillow. Explain. (07 marks)

(b) When an apple falls from a tree, what happens to its total energy just before touching the ground? Why? (07 marks)

(c) How do marine animals live deep inside a lake, when the surface of the lake freezes?

(07 marks)

Qs 4 (a) When we rub our hands, they become warm. How have we supplied heat to our hands?

(07 marks)

(b) An ordinary electric fan does not cool the air but still gives comfort in summer. Explain.

(07 marks)

(c) On a hot summer day, we want to cool our room by opening the refrigerator door and closing all windows and doors. Will the process work? Explain the reasons for your answer.

(07 marks)

Qs 5 A conical tent is to accommodate 11 persons. Each person must have 4 sq m of space on the ground and 20 cu.m of air to breathe. What should be the height of the tent?

(20 marks)

OR

A cyclist, after cycling a certain distance, stopped for half an hour to repair his machine. After which he completes the whole journey, of 30 km, at half speed, in 5 hours. If the breakdown had occurred 10 km further off, he would have finished the whole journey in 4 hours. Find where the breakdown occurred and his original speed.

#### SECTION B

Answer any four; each carries 15 marks.

Qs 6 Write short notes on

- (a) Tap Hammer
- (b) Wheel Press
- (c) Ultrasonic testing of loco axles. (05x3= 15 marks)

Qs 7 Briefly describe-

(a) The lacunae in the CLW type of Incentive Scheme in vogue at LGDS.

(07 marks)

(b) "Fatigue of Steel". What are the factors that cause fatigue failure and how can they be mitigated?

(08 marks)

Qs 8 What are the different defects that can occur in a Wheel? What will be the effect of each type of defect?

(15 marks)

Qs 9 A loco pilot has passed a stop signal at Danger and complains of poor brake power. How will you establish that the loco pilot's statement is correct and how will you establish whether it is a motive power or a rolling stock defect?

(15 marks)

Qs 10 What are the precautions to be taken for handling, mounting and dismounting, cleaning and transportation of roller bearings? (15 marks)

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**SAMPLE QUESTION - 2**

Professional Paper - II (I)

TIMING - 3 HOURS

NOTE :-

- i) Attempt any five questions from Part-A ( each question carries 10 marks ) and attempt any four question from Part -B ( each question carries 25 marks )
- ii) If extra questions are attempted last question will not be evaluated.

**PART - A**

✓1. Write full form of :-

- |           |            |
|-----------|------------|
| a) SPART  | f) ARME    |
| b) DCRG   | g) HOER    |
| c) RDSO   | h) IRSME   |
| d) FOIS   | i) CAMTECH |
| e) COFMOW | j) JCM     |

✓2. Write True or False :-

- a) Rajdhani coaches are End On generation coaches.
- b) East Coast Railway is highest loading zone of Indian Railways.
- c) A diesel shed is covered under Factory Act.
- d) ISO-14000 certificate is given to an organization for certifying its contribution for ' environmental protection '.
- e) Every Zone of Indian Railways has at least one workshop for POH of coaches.
- f) Heat treatment is a process to improve anti corrosion properties of steel.
- g) Ultra Sonic Testing is a destructive process of testing
- h) If an individual does not follow the provision of Official Language Act, he can be prosecuted in a Court of Law.
- i) An unmarried daughter employed in a Private Job and above the age of 21 years can be considered as 'dependent' as per 'Pass Rules'.
- j) ' Jharsuguda ' is the interchange point between ' East Coast ' and ' South East Central Railway'.

3. Fill up the Blanks :-

- ✓ a) POH period of a coach running in Mail Express train is ..... months.
- ✓ b) With the loading of CC+8+2, the axle load of BOXN wagon is ..... tonnes.
- ✓ c) First POH of a new BOXN wagon becomes due after ..... months.
- ✓ d) For a CC rake, BPC is valid for .....KMs.
- ✓ e) Stainless Steel is an alloy steel which has main alloying element as..... and .....
- ✓ f) In a year ..... leave is credited to LAP account of an employee.
- ✓ g) A total of .....no. of PNMs are to be held with each Union in a year at HQ level.
- ✓ h) Full form of FRP is .....
- ✓ i) The pay scale of a Junior Scale Gr. 'B' Officer is .....
- ✓ j) Codal life of a coach as per the Mechanical code is .....years.

4 Explain the difference between: -

- ✓ a) Work and Energy
- ✓ b) Mass and Weight
- ✓ c) Friction and Viscosity
- ✓ d) Brass and Bronze
- ✓ e) Annealing and Normalizing

5. a) Name the documents that fall under section 3(3) of the official language act 1963.

✓ b) Name the State & Union territories which fall under region 'A' & 'B' per official language rule 1976.

- 6.
- ✓ a) List down the Minor Penalties & Major Penalties as given in D&A Rules.
  - ✓ b) Calculate the volume of a cone whose radius is 10cms and height is 25cms.

**PART - B** ( Any four questions )

1. ✓ a) Why the heat treatment of steel is necessary before it can be put to any industrial use ?  
✓ b) Explain briefly following heat treatment processes : -
  - i) Annealing      iv) Case Carburizing
  - ii) Hardening    v) Normalizing
  - iii) Tempering
2. ✓ a) Write the main provision of Workmen Compensation Act.  
✓ b) What are the retirement benefits available to a Railway employee after retirement?
3. ✓ a) Explain the Chemical process involved in corrosion of metal ?  
✓ b) Explain in brief, the different anti corrosive methods employed in Railways to reduce corrosion?
4. Explain the following procurement methods of Stores, bringing out the advantage & disadvantage of each method -
  - ✓ i) Open Tender
  - ✓ ii) Limited Tender
  - ✓ iii) Special Limited Tender
  - ✓ iv) Single Tender
  - ✓ v) Spot Purchase Committee
5. Explain the following terms related to computers : -
  - ✓ i) Storage Devices in a computer
  - ✓ ii) Microsoft Office Application Programmes
  - ✓ iii) Net working of Computers
  - ✓ iv) Internet
  - ✓ v) Virus
6. ✓ a) What do you understand by Zero based budgeting. Why is it considered important?  
✓ b) How is the account of expenditure is done in Workshop using WMS.

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### SAMPLE QUESTION - 3

#### Professional Paper-II (I)

(Professional subject, General Knowledge & Official language policy and Rules)

Maximum Marks : 150    Qualifying Marks : 90    Time Allowed : 3 hours

#### Note :

- i) Attempt any Two questions from Part-A and Four questions from Part-B. Question No.1 of Part-B is compulsory.
- ii) Marks allotted to each question are indicated against each question.
- iii) If extra questions are attempted, last question will not be evaluated.
- iv) No calculator or any electronic device is allowed to any candidate in the examination hall.
- v) In the answers to the objective type questions, no correction of any type like cutting, over-writing, erasing, scoring off a ticked answer in multiple choice and ticking another answer and modifying the answer in anyway etc. is allowed. If any correction is made, that answer shall not be evaluated at all.
- vi) All answers are to be written in the answer sheet only.
- vii) The question paper is bilingual and candidates are free to answer in Hindi or English.

#### PART - A

1. a) Describe the Official Language Act-1963. Please give details of Section-3(3) of this Act. Keeping in view of implementing Official Language Act, how many Regions have been set up in the country? Please give Region wise details of the States. 15 marks
- b) List out the Zonal Railways on the Indian Railways and indicate the location of their headquarters. 10 marks
2. a) Define Velocity and Acceleration. What are their units ? 10 marks
- b) Two trains 221 metres and 199 metres in length respectively are running in opposite directions, one at the speed of 40 kmph and the other at the speed of 32 kmph. In what time will they completely clear of each other from the moment they meet ? 15 marks
3. a) Explain briefly the Newton's Laws of Motion. 15 marks
- b) Write short notes on : 10 marks
  - i) Coulomb's Law
  - ii) Ohm's Law

**PART – B**

**1. (This question is compulsory)**

a) Fill in the blanks :

- i) Codal life of Diesel Locomotives is \_\_\_\_\_ years. 1 mark
- ii) The horse power of WDG<sub>4</sub> diesel locomotives is \_\_\_\_\_. 1 mark
- iii) The diameter of new coach wheel is \_\_\_\_\_ mm and condemnation limit is \_\_\_\_\_ mm. 2 marks
- iv) The code of Second Class Three Tier coach is \_\_\_\_\_ and Pantry Car is \_\_\_\_\_. 2 marks
- v) The units for specific fuel consumption for diesel loco is \_\_\_\_\_. 1 mark
- vi) Full form of TIG welding is \_\_\_\_\_. 1 mark
- vii) For a CC rake, BPC is valid for \_\_\_\_\_. 1 mark
- viii) 1<sup>st</sup> transition in WDM<sub>2</sub> diesel loco takes place at a speed of \_\_\_\_\_ kmph. 1 mark

b) Write short notes on any two of the following :

15 marks

- i) Benchmarking
- ii) Failure Analysis
- iii) Quality Improvement in Work Area.

2. What is Disaster Management ? What do you understand by the term "Golden Hour" ? Give suggestions to make disaster management more effective. 25 marks

3. Write short notes on any two of the followings :

25 marks

- i) Classification of tenders
- ii) Scrap
- iii) Schedule of Powers

4. a) What do you understand by ISO 9000 and ISO 14000. Explain in brief. 15 marks

b) What are the benefits of ISO certification ? 10 marks

5. Write short notes on any four of the followings: 25 marks

- i) Internet
- ii) E-mail
- iii) M.S. Excel
- iv) M.S. Power Point
- v) RAM

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