

**QUESTION PAPER FOR THE POST OF JUNIOR ENGINEER
(MECHANICAL DEPARTMENT)**

Date : 01.10.2016

Time: 3Hrs

INSTRUCTIONS

SECTION - I

Marks : 100

1. Common to all candidates.
2. Consists of 25 objective type questions
3. Each question carries 2 marks
4. **Answer all questions** 25 x 2 = 50
5. No Minus Mark for wrong answer.

SECTION - II

Part - A Common to all candidates.

Answer any **TWO** questions 2 x 10 = 20

Part - B Trade questions

Answer any **THREE** questions 3 x 10 = 30

SECTION - I

Answer all questions

Choose the correct answer:

1. Expansion of MUTP is _____

(a) Mumbai Urban Transport Project	(b) Mumbai Urban Transport Programme
(c) Mumbai Urban Transport Plan	(d) Mumbai Urban Travel Plan

2. FIAT Bogies are manufactured at _____

(a) Shop - 23	(b) Shop - 24	(c) Shop - 19	(d) Shop - 27
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3. _____ No. of days of LAP leave is credited to an employee account in a year

(a) 10	(b) 5	(c) 20	(d) 30
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4. Camber setting is done at _____

(a) Side Wall Assembly stage	(b) End Wall Assembly Stage
(c) Underframe Assembly Stage	(d) Body Shell Assembly Stage

5. The component connecting Shell and Bogie is _____

(a) C P Pin	(b) Head stock	(c) Trough Floor	(d) Solebar
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6. Electrode used in Butt Seam Welding is made of _____
(a) Copper (b) Brass (c) Corten Steel (d) Stainless Steel
7. The instrument used to check the squareness of a job is _____
(a) Vernier (b) Micrometer (c) Height gauge (d) Try square
8. Number of Centre Pivot Pins per coach is _____
(a) One (b) Two (c) Three (d) Four
9. In Conventional coach, the material used in Sidewall panelling is _____
(a) PVC (b) LP sheet (c) Decolite (d) Cement
10. The Occupier of Furnishing division is _____
(a) CWE / S (b) CME (c) CPO (d) CWE / F
11. Function of Primer Paint on steel is to _____
(a) Decorate the surface
(b) Absorb the Heat
(c) Absorb the moisture
(d) Protect from rusting
12. Under frame Assembly work in Shell division is carried out in _____
(a) Shop - 22 (b) Shop - 21 (c) Shop - 14 (d) Shop - 24
13. Under DAR Removal from service is a _____
(a) Minor penalty (b) Major penalty (c) Not a penalty (d) None of these
14. Least count of a Micrometer is _____
(a) 0.01mm (b) 0.02mm (c) 0.001mm (d) 0.002mm
15. The component which connects two conventional coaches _____
(a) Anchor link (b) Bolster assembly
(c) Screw coupling (d) Shock absorber

16. S-1302 indent will be raised for _____

- (a) Drawl of material from stores
- (b) Sending the scrap material to stores
- (c) Procurement of Non stock items
- (d) Procurement of Stock items

17., IDN means _____

- (a) Inspection Demand Note
- (b) Incentive Demand Note
- (c) Investigation Demand Note
- (d) Increment Demand Note

18. Expansion of CPO in ICF _____

- (a) Chief Personnel Officer
- (b) Chief Purchase Officer
- (c) Central Purchase Officer
- (d) Central Personnel Officer

19. LHB sidewalls are made up of _____

- (a) Corton steel
- (b) Mild steel
- (c) Stainless steel
- (d) Aluminum

20. In ICF, day shift Factory working hours per day (except Saturday) is _____

- (a) 8.00 Hrs 36 Minutes
- (b) 8.00 Hrs 35 Minutes
- (c) 8.00 Hrs 30 Minutes
- (d) 8.00 Hrs 25 Minutes

21. As per leave rules CCL is _____

- (a) Child Casual Leave
- (b) Contract Care Leave
- (c) Child Care Leave
- (d) Casual Contract Leave

22. To soften steel, _____ heat treatment process used is _____

- (a) Hardening
- (b) Annealing
- (c) Nitriding
- (d) Quenching

23. Type of Brake system used in Conventional coach is _____

- (a) Air Brake System
- (b) Disc Brake System
- (c) E P Brake System
- (d) Vaccum Brake systems

24. Specification of Corten Steel used in Sidewall of Conventional Shell is _____

- (a) IRS – M36
- (b) IRS-M41
- (c) IS:2062
- (d) IS:226

25. Hand Taps are used for making _____

- (a) Thread Cutting
- (b) Chamfering
- (c) Knurling
- (d) Drilling

SECTION – II**PART - A****Answer any TWO Questions****(Marks 2 x 10=20)**

1. Explain Different Types of welfare measures available to ICF employees.
2. Write the activities carried out in detail about any shop you are familiar with.
3. Write short notes on any TWO a) Bio-toilet b) LHB coach c) Casual Leave
4. Explain briefly about the passes issued to Railway employees.
5. Write various Incentives given to ICF employees to propagate Hindi language in official works.
6. Explain the Incentive System adopted in ICF.

PART B**BLACK SMITH****Answer any THREE Questions****(Marks 3 x 10 = 30)**

- 1) Explain the various operations performed by Forging?
- 2) Write short note on any Two of the following
(a) Anvil (b) Swage Block (c) Tongs
- 3) Briefly explain any Two of the following?
(1) Annealing (2) Hardening (4) Tempering
- 4) Distinguish between Drawing and Upsetting in forging
- 5) Write Spring manufacturing operations at ICF in detail?
- 6) What are the safety precautions and safety equipments to be used in your work place?

SECTION – II

PART - A

Answer any TWO Questions

(Marks 2 x 10=20)

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PART B

ELECTRO PLATER

Answer any THREE Questions

(Marks 3 x 10 = 30)

- 1) What are the advantages of Electroplating over painting?
- 2) Write short notes on any Two of the following?
(a) Anodizing (b) Phosphating (c) Nickel plating
- 3) Briefly explain any Two of the following?
(a) Galvanizing (b) Buffing (c) Degreasing.
- 4) Explain the process of Electroplating of metals?
- 5) Why surface preparation of component is necessary before electroplating?
- 6) What are the safety precautions and safety equipments to be used in your work place?

SECTION – II

PART - A

Answer any TWO Questions

(Marks 2 x 10=20)

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3. Write short notes on any TWO a) Bio-toilet b) LHB coach c) Casual Leave
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PART B

FITTER GENERAL

Answer any THREE Questions

(Marks 3 x 10 = 30)

- 1) List various Tools used by Fitters and Explain any two
- 2) Write short notes on any Two of the following?
(a) Fit (b) Fixture (c) Jig
- 3) Briefly explain any Two of the following?
(a) Try Square (b) Least count (c) Height Gauge
- 4) Explain Vernier Caliper in detail.
- 5) What is Camber in Body Shell Assembly and explain?
- 6) What are the safety precautions and safety equipments to be used in your work place?

SECTION – II

PART - A

Answer any TWO Questions

(Marks 2 x 10=20)

1. Explain Different Types of welfare measures available to ICF employees.
2. Write the activities carried out in detail about any shop you are familiar with.
3. Write short notes on any TWO a) Bio-toilet b) LHB coach c) Casual Leave
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PART B

FITTER TOOL ROOM

Answer any THREE Questions

(Marks 3 x 10 = 30)

- 1) Explain various Tools used in fitting work and Explain any two with neat sketch.
- 2) Write short notes on any Two of the following?
 - (a) Drill Jig (b) Dial gauge (c) Tolerance
- 3) Briefly explain any Two of the following
 - (a) Simple Punch & Die (b) Hardening Process (c) Least count
- 4) Sketch and Explain Micrometer in detail and its uses.
- 5) Explain the maintenance of 1000 Ton Press Tool [Punch & Die]
- 6) What are the safety precautions and safety equipments to be used in your work place?

SECTION – II

PART - A

Answer any TWO Questions

(Marks 2 x 10=20)

1. Explain Different Types of welfare measures available to ICF employees.
2. Write the activities carried out in detail about any shop you are familiar with.
3. Write short notes on any TWO a) Bio-toilet b) LHB coach c) Casual Leave
4. Explain briefly about the passes issued to Railway employees.
5. Write various Incentives given to ICF employees to propagate Hindi language in official works.
6. Explain the Incentive System adopted in ICF.

PART B

GRIT BLASTER

Answer any THREE Questions

(Marks 3 x 10 = 30)

- 1) List the items Grit Blasted and write the Advantages of Grit Blasting?
- 2) Write short notes on any Two of the following?
 - (a) Primer paint
 - (b) Putty
 - (c) Spray painting
- 3) Briefly explain any Two of the following?
 - (a) Grits used for grit blasting
 - (b) PU paint.
 - (c) Emery sheet
- 4) How shells are Grit/Shot blasted in Shop-54 at Furnishing?
- 5) Explain the working of any Grit Blasting Plant in Shell or Fur?
- 6) What are the safety precautions and safety equipments to be used in your work place?

SECTION – II

PART - A

Answer any TWO Questions

(Marks 2 x 10=20)

1. Explain Different Types of welfare measures available to ICF employees.
2. Write the activities carried out in detail about any shop you are familiar with.
3. Write short notes on any TWO a) Bio-toilet b) LHB coach c) Casual Leave
4. Explain briefly about the passes issued to Railway employees.
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6. Explain the Incentive System adopted in ICF.

PART B

MACHINIST TOOL ROOM

Answer any THREE Questions

(Marks 3 x 10 = 30)

- 1) What are the different types of Machining Operations performed on a Milling Machine? Explain any Two in Detail?
- 2) Write short note on any Two of the following
(a) Plug Gauge (b) Veriner Caliper (c) Tolerance
- 3) Briefly explain any Two of the following?
(a) Jig Boring M/c (b) Surface Grinding M/c (c) CNC Machines
- 4) Explain work holding devices used in a lathe?
- 5) What are the functions of Cutting Fluid and write the properties of Cutting Fluid?
- 6) What are the safety precautions and safety equipments to be used in your work place?

SECTION – II**PART - A****Answer any TWO Questions****(Marks 2 x 10=20)**

1. Explain Different Types of welfare measures available to ICF employees.
2. Write the activities carried out in detail about any shop you are familiar with.
3. Write short notes on any TWO a) Bio-toilet b) LHB coach c) Casual Leave
4. Explain briefly about the passes issued to Railway employees.
5. Write various Incentives given to ICF employees to propagate Hindi language in official works.
6. Explain the Incentive System adopted in ICF.

PART B**MACHINIST GENERAL****Answer any THREE Questions****(Marks 3 x 10 = 30)**

- 1) What are the different types of machining operations performed on Lathe? Explain any Two in detail.
- 2) Write short notes on any Two of the following?
(a) Micrometer (b) Tolerance (c) Tail stock
- 3) Briefly explain any Two of the following?
(a) Speed (b) Feed (c) Depth of cut.
- 4) What are the functions of Cutting Fluid and write the properties of Cutting fluid?
- 5) What is CNC machine? What are the advantages of CNC machines over conventional machines?
- 6) What are the safety precautions and safety equipments to be used in your work place?

SECTION – II

PART - A

Answer any TWO Questions

(Marks 2 x 10=20)

1. Explain Different Types of welfare measures available to ICF employees.
2. Write the activities carried out in detail about any shop you are familiar with.
3. Write short notes on any TWO a) Bio-toilet b) LHB coach c) Casual Leave
4. Explain briefly about the passes issued to Railway employees.
5. Write various Incentives given to ICF employees to propagate Hindi language in official works.
6. Explain the Incentive System adopted in ICF.

PART B

PAINTER

Answer any THREE Questions

(Marks 3 x 10 = 30)

- 1) Explain the interior painting of Conventional Non AC coaches?
- 2) Write short notes on any Two of the following?
 - (a) Thermal insulation in coaches
 - (b) Phosphating
 - (c) Putty
- 3) Briefly explain any Two of the following?
 - (a) Dip painting
 - (b) Viscosity
 - (c) Dry Film Thickness
- 4) Explain the operation of spray painting used in ICF.
- 5) What are common defects in painting? Explain the causes and suggest the remedies.
- 6) What are the safety precautions and safety equipments to be used in your work place?

SECTION – II

PART - A

Answer any TWO Questions

(Marks 2 x 10=20)

1. Explain Different Types of welfare measures available to ICF employees.
2. Write the activities carried out in detail about any shop you are familiar with.
3. Write short notes on any TWO a) Bio-toilet b) LHB coach c) Casual Leave
4. Explain briefly about the passes issued to Railway employees.
5. Write various Incentives given to ICF employees to propagate Hindi language in official works.
6. Explain the Incentive System adopted in ICF.

PART B

WELDER

Answer any THREE Questions

(Marks 3 x 10 = 30)

- 1) Explain in detail about the CO2 Welding Process followed in ICF?
- 2) Write short notes on any Two of the following?
 - (a) Arc Welding. (b) Butt Seam welding. (c) Spot Welding.
- 3) Briefly explain any Two of the following?
 - (a) Electrode b) Welding defects (c) Edge Preparation for welding.
- 4) What is TIG welding and explain its advantages?
- 5) Explain the process of Oxy-Acetylene gas cutting.
- 6) What are the safety precautions and safety equipments to be used in your work place?

SECTION – II

PART - A

Answer any TWO Questions

(Marks 2 x 10=20)

1. Explain Different Types of welfare measures available to ICF employees.
2. Write the activities carried out in detail about any shop you are familiar with.
3. Write short notes on any TWO a) Bio-toilet b) LHB coach c) Casual Leave
4. Explain briefly about the passes issued to Railway employees.
5. Write various Incentives given to ICF employees to propagate Hindi language in official works.
6. Explain the Incentive System adopted in ICF.

PART B

WOOD MACHINIST

Answer any THREE Questions

(Marks 3 x 10 = 30)

- 1) What are the various marking and measuring tools used by a wood machinist and Explain any two in each.
- 2) Write short notes on any Two of the following
(a) Compreg Ply wood (b) Seasoning of Wood (c) Wooden joints
- 3) Briefly Explain any Two of the following
(a) Hard wood (b) Handsaw (c) Defects in wood
- 4) What are the machines used in Wood Machining work. Explain any one in detail?
- 5) How will you identify a Teak Wood and explain its usage?
- 6) What are the safety precautions and safety equipments to be used in your work place?

SECTION – II

PART - A

Answer any TWO Questions

(Marks 2 x 10=20)

1. Explain Different Types of welfare measures available to ICF employees.
2. Write the activities carried out in detail about any shop you are familiar with.
3. Write short notes on any TWO a) Bio-toilet b) LHB coach c) Casual Leave
4. Explain briefly about the passes issued to Railway employees.
5. Write various Incentives given to ICF employees to propagate Hindi language in official works.
6. Explain the Incentive System adopted in ICF.

PART B

CARPENTER

Answer any THREE Questions

(Marks 3 x 10 = 30)

- 1) What are the various types of tools used by a carpenter? Explain any two with sketches.
- 2) Write short notes on any Two of the following?
(a) FRP components (b) Teak wood (c) Wood defects
- 3) Briefly explain any Two of the following?
(a) Wooden joints (b) L.P.Sheet (c) NFTC
- 4) What is compreg plywood ? where it is used in Furnishing Division?
- 5) What are the advantages and disadvantages of using compreg plywood to wood?
- 6) What are the safety precautions and safety equipments to be used in your work place?