

# Railway Recruitment Board

## Notations :

- Options shown in green color and with ✓ icon are correct.
- Options shown in red color and with ✗ icon are incorrect.

<b>Question Paper Name:</b>	Junior Engineer 26th Aug Shift 1 Actual
<b>Subject Name:</b>	Junior Engineer
<b>Creation Date:</b>	2015-08-18 12:50:20.0
<b>Cut Off:</b>	0
<b>Duration:</b>	120
<b>Number of Questions:</b>	150
<b>Total Marks:</b>	150.0

## Junior Engineer

Group Number :	1
Group Id :	1
Group Maximum Duration :	0
Group Minimum Duration :	120
Revisit allowed for view? :	No
Revisit allowed for edit? :	No
Break time:	0
Group Marks:	150.0

## Junior Engineer

Section Id :	1
Section Number :	1
Section type :	Online
Mandatory or Optional:	Mandatory
Number of Questions:	150
Number of Questions to be attempted:	150
Section Marks:	150.0

Sub-Section Number:	1
Sub-Section Id:	1
Question Shuffling Allowed :	Yes

Question Number : 1 Question Id : 1 Question Type : MCQ Option Shuffling : No  
Correct : 1.0 Wrong : 0.33

Which of the following is an extensive property ?

## Options :

- ✗ Pressure

2. ✓ Heat capacity

3. ✗ Temperature

4. ✗ Specific volume

Question Number : 2 Question Id : 2 Question Type : MCQ Option Shuffling : No

Correct : 1.0 Wrong : 0.33

Kelvin Planck's law deals with

Options :

1. ✗ Conservation of work

2. ✗ Conservation of heat

3. ✓ Conservation of heat into work

4. ✗ Conservation of work into heat

Question Number : 3 Question Id : 3 Question Type : MCQ Option Shuffling : No

Correct : 1.0 Wrong : 0.33

In which of the following mechanisms, is heat conducted in liquid and gas

Options :

1. ✗ Lattice vibration

2. ✗ Transportation of free electrons

3. ✓ Collisions and diffusion

4. ✗ No heat conducted

Question Number : 4 Question Id : 4 Question Type : MCQ Option Shuffling : No

Correct : 1.0 Wrong : 0.33

An essential requirement for the transfer of heat from one body to another body is that

Options :

1. ✗ Both bodies must be solids

2. ✗ Both bodies must be in contact

3. ✓ Temperatures of the two bodies must be different

4. ✗ Temperatures of the two bodies must be same

Question Number : 5 Question Id : 5 Question Type : MCQ Option Shuffling : No

Correct : 1.0 Wrong : 0.33

The silencer of an internal combustion engine

Options :

1.  Reduces noise
2.  Decreases break specific fuel consumption
3.  Increases break specific fuel consumption
4.  Has no effect on its efficiency

Question Number : 6 Question Id : 6 Question Type : MCQ Option Shuffling : No

Correct : 1.0 Wrong : 0.33

Diesel engines are generally

Options :

1.  Quality governed
2.  Quantity governed
3.  Combination of quality and quantity governed
4.  Heat and mass governed

Question Number : 7 Question Id : 7 Question Type : MCQ Option Shuffling : No

Correct : 1.0 Wrong : 0.33

The theoretically correct mixture of air and petrol is

Options :

1.  10 : 1
2.  15 : 1
3.  20 : 1
4.  25 : 1

Question Number : 8 Question Id : 8 Question Type : MCQ Option Shuffling : No

Correct : 1.0 Wrong : 0.33

Trepanning operation is used for

Options :

1.  Bevelling the edges
2.  Finishing the ends of job
3.  Cutting grooves
4.  Producing large holes

Question Number : 9 Question Id : 9 Question Type : MCQ Option Shuffling : No

Correct : 1.0 Wrong : 0.33

The gases used in TIG welding are

Options :

1. ✘ Helium and neon
2. ✔ Argon and helium
3. ✘ Ozone and neon
4. ✘ Carbondioxide and nitrogen

Question Number : 10 Question Id : 10 Question Type : MCQ Option Shuffling : No

Correct : 1.0 Wrong : 0.33

In centrifugal casting , the cores are generally made of

Options :

1. ✘ Wax
2. ✘ Plastic
3. ✘ Plaster of Paris
4. ✔ Cores are not used

Question Number : 11 Question Id : 11 Question Type : MCQ Option Shuffling : No

Correct : 1.0 Wrong : 0.33

Calculate the tail stock set over to turn a taper of 1 in 10 on a job of 60 mm length

Options :

1. ✘ 6 mm
2. ✔ 3 mm
3. ✘ 10 mm
4. ✘ 60 mm

Question Number : 12 Question Id : 12 Question Type : MCQ Option Shuffling : No

Correct : 1.0 Wrong : 0.33

The maximum flame temperature occurs

Options :

1. ✘ At the outer cone
2. ✔ At the inner cone

3. ✘ Between the outer and inner cone

4. ✘ At the torch tip

Question Number : 13 Question Id : 13 Question Type : MCQ Option Shuffling : No  
Correct : 1.0 Wrong : 0.33

Down milling is also known as

Options :

1. ✘ Conventional milling

2. ✔ Climb milling

3. ✘ End milling

4. ✘ Face milling

Question Number : 14 Question Id : 14 Question Type : MCQ Option Shuffling : No  
Correct : 1.0 Wrong : 0.33

Bolt heads are manufactured by

Options :

1. ✘ Swagging

2. ✘ Roll forging

3. ✘ Tumbling

4. ✔ Upset forging

Question Number : 15 Question Id : 15 Question Type : MCQ Option Shuffling : No  
Correct : 1.0 Wrong : 0.33

The resistance of a conductor does not depend upon

Options :

1. ✔ Shape of cross section

2. ✘ Temperature

3. ✘ Material

4. ✘ Length

Question Number : 16 Question Id : 16 Question Type : MCQ Option Shuffling : No  
Correct : 1.0 Wrong : 0.33

..... is not a resistance welding process.

Options :

1. ✘ Projection
2. ✘ Seam
3. ✘ Flash
4. ✔ Carbon arc

Question Number : 17 Question Id : 17 Question Type : MCQ Option Shuffling : No

Correct : 1.0 Wrong : 0.33

Which of the following motors will have the highest "no load" speed?

Options :

1. ✘ Shunt motor
2. ✔ Series motor
3. ✘ Cumulative Compound motor
4. ✘ Differential Compound motor

Question Number : 18 Question Id : 18 Question Type : MCQ Option Shuffling : No

Correct : 1.0 Wrong : 0.33

In the DC motor, iron losses occur in

Options :

1. ✘ Field
2. ✔ Armature
3. ✘ Brushes
4. ✘ Commutator

Question Number : 19 Question Id : 19 Question Type : MCQ Option Shuffling : No

Correct : 1.0 Wrong : 0.33

The number of poles in a phase induction motor at 50 Hz and running at 1500 rpm will be

Options :

1. ✘ 2
2. ✘ 3
3. ✔ 4
4. ✘ 5

Question Number : 20 Question Id : 20 Question Type : MCQ Option Shuffling : No

Correct : 1.0 Wrong : 0.33

A power plant usually works on

Options :

1. ✘ Otto cycle
2. ✘ Binary vapour cycle
3. ✘ Brayton cycle
4. ✔ Rankine cycle

Question Number : 21 Question Id : 21 Question Type : MCQ Option Shuffling : No

Correct : 1.0 Wrong : 0.33

Turbine used for low head is

Options :

1. ✔ Kaplan turbine
2. ✘ Francis turbine
3. ✘ Pelton Wheel turbine
4. ✘ Propellerturbine

Question Number : 22 Question Id : 22 Question Type : MCQ Option Shuffling : No

Correct : 1.0 Wrong : 0.33

Transformer ratings are usually expressed in

Options :

1. ✔ kVA
2. ✘ kW
3. ✘ kWh
4. ✘ kVAR

Question Number : 23 Question Id : 23 Question Type : MCQ Option Shuffling : No

Correct : 1.0 Wrong : 0.33

A step up transformer increases

Options :

1. ✘ power
2. ✘ resistance
3. ✔ voltage

#### 4. ✘ frequency

Question Number : 24 Question Id : 24 Question Type : MCQ Option Shuffling : No  
Correct : 1.0 Wrong : 0.33

In an AC circuit, the ratio of kW / kVA represents

Options :

1. ✔ Power factor
2. ✘ Form factor
3. ✘ Load factor
4. ✘ Diversity factor

Question Number : 25 Question Id : 25 Question Type : MCQ Option Shuffling : No  
Correct : 1.0 Wrong : 0.33

Depletion layer is found in

Options :

1. ✘ p type semiconductors
2. ✘ n type semiconductors
3. ✔ diodes
4. ✘ intrinsic semiconductors

Question Number : 26 Question Id : 26 Question Type : MCQ Option Shuffling : No  
Correct : 1.0 Wrong : 0.33

The energy gap in a semiconductor is

Options :

1. ✘ zero
2. ✘ infinite
3. ✘ very high
4. ✔ of the order of 1 eV

Question Number : 27 Question Id : 27 Question Type : MCQ Option Shuffling : No  
Correct : 1.0 Wrong : 0.33

BJT stands for

Options :

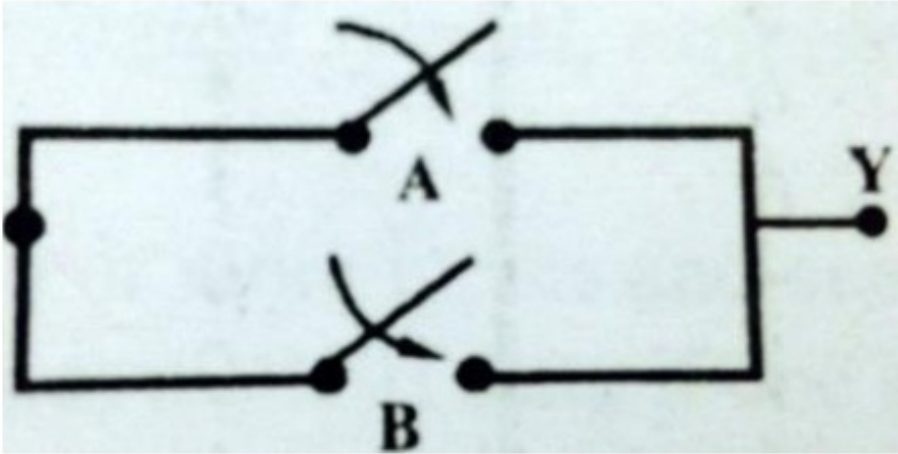
1. ✘ Binomial Junction Terminal



- 2. ✓ Bipolar Junction Transistor
- 3. ✗ Binomial Junction Transistor
- 4. ✗ Bipolar Junction Terminal

Question Number : 28 Question Id : 28 Question Type : MCQ Option Shuffling : No  
Correct : 1.0 Wrong : 0.33

The following figure is an electrical equivalent of



- Options :
- 1. ✗ NOT gate
  - 2. ✓ OR gate
  - 3. ✗ NOR gate
  - 4. ✗ NAND gate

Question Number : 29 Question Id : 29 Question Type : MCQ Option Shuffling : No  
Correct : 1.0 Wrong : 0.33

The hexadecimal equivalent of the decimal number 210 is

- Options :
- 1. ✗ H1
  - 2. ✗ F2
  - 3. ✓ D2
  - 4. ✗ H2

Question Number : 30 Question Id : 30 Question Type : MCQ Option Shuffling : No  
Correct : 1.0 Wrong : 0.33

The number of atoms in a body centred unit cell is

- Options :
- 1. ✗ 1

2. ✓ 2

3. ✗ 3

4. ✗ 4

Question Number : 31 Question Id : 31 Question Type : MCQ Option Shuffling : No  
Correct : 1.0 Wrong : 0.33

Ideal operational amplifier has input impedance of

Options :

1. ✗ zero

2. ✓ infinity

3. ✗ 1 ohm

4. ✗ 0.1 ohm

Question Number : 32 Question Id : 32 Question Type : MCQ Option Shuffling : No  
Correct : 1.0 Wrong : 0.33

Theoretically, a bridge rectifier has a maximum efficiency of

Options :

1. ✗ 84%

2. ✗ 48.2%

3. ✗ 82.2%

4. ✓ 81.2%

Question Number : 33 Question Id : 33 Question Type : MCQ Option Shuffling : No  
Correct : 1.0 Wrong : 0.33

Avalanche breakdown is primarily dependent on the phenomenon of

Options :

1. ✗ Doping

2. ✗ Collision

3. ✗ Ionisation

4. ✓ Recombination

Question Number : 34 Question Id : 34 Question Type : MCQ Option Shuffling : No  
Correct : 1.0 Wrong : 0.33

A UJT contains

Options :

1. ✘ 4 pn junctions
2. ✘ 3 pn junctions
3. ✘ 2 pn junctions
4. ✔ 1 pn junction

Question Number : 35 Question Id : 35 Question Type : MCQ Option Shuffling : No  
Correct : 1.0 Wrong : 0.33

If a material has identical properties in all directions, it is said to be

Options :

1. ✘ Homogeneous
2. ✔ Isotropic
3. ✘ Elastic
4. ✘ Orthotropic

Question Number : 36 Question Id : 36 Question Type : MCQ Option Shuffling : No  
Correct : 1.0 Wrong : 0.33

If the plasticity index of a soil mass is zero, the soil is

Options :

1. ✘ Loess
2. ✘ Clayey silt
3. ✘ Silt
4. ✔ Sand

Question Number : 37 Question Id : 37 Question Type : MCQ Option Shuffling : No  
Correct : 1.0 Wrong : 0.33

In RCC beams, as the percentage area of tensile steel increases

Options :

1. ✔ Depth of neutral axis increases
2. ✘ Depth of neutral axis decreases
3. ✘ Depth of neutral axis does not change
4. ✘ Lever arm increases

Question Number : 38 Question Id : 38 Question Type : MCQ Option Shuffling : No  
Correct : 1.0 Wrong : 0.33

Fluid is a substance which offers no resistance to change of

Options :

1. ✘ Volume
2. ✘ Pressure
3. ✔ Shape
4. ✘ Flow

Question Number : 39 Question Id : 39 Question Type : MCQ Option Shuffling : No  
Correct : 1.0 Wrong : 0.33

The invar tape is made of an alloy of

Options :

1. ✘ Copper and steel
2. ✘ Brass and nickel
3. ✘ Brass and steel
4. ✔ Nickel and steel

Question Number : 40 Question Id : 40 Question Type : MCQ Option Shuffling : No  
Correct : 1.0 Wrong : 0.33

Gantt chart provides information about

Options :

1. ✘ Break even point analysis
2. ✔ Production schedule
3. ✘ Material handling layout
4. ✘ Determining selling price

Question Number : 41 Question Id : 41 Question Type : MCQ Option Shuffling : No  
Correct : 1.0 Wrong : 0.33

When water is added to cement

Options :

1. ✘ Chemical reaction starts
2. ✘ Heat is absorbed
3. ✔ Heat is generated

4. ✘ Impurities are washed out

Question Number : 42 Question Id : 42 Question Type : MCQ Option Shuffling : No  
Correct : 1.0 Wrong : 0.33

Pascal-second is the unit of

Options :

1. ✘ Pressure
2. ✘ Kinematic viscosity
3. ✔ Dynamic viscosity
4. ✘ Surface tension

Question Number : 43 Question Id : 43 Question Type : MCQ Option Shuffling : No  
Correct : 1.0 Wrong : 0.33

Which of the following is not used in measuring perpendicular offsets?

Options :

1. ✔ Line ranger
2. ✘ Steel tape
3. ✘ Optical square
4. ✘ Cross staff

Question Number : 44 Question Id : 44 Question Type : MCQ Option Shuffling : No  
Correct : 1.0 Wrong : 0.33

A fully saturated soil is said to be

Options :

1. ✘ One phase system
2. ✘ Two phase system with soil and air
3. ✔ Two phase system with soil and water
4. ✘ Three phase system

Question Number : 45 Question Id : 45 Question Type : MCQ Option Shuffling : No  
Correct : 1.0 Wrong : 0.33

Which of the following trees yields hard wood?

Options :

1. ✘ Deodar
2. ✘ Chir
3. ✔ Shishum
4. ✘ Pine

Question Number : 46 Question Id : 46 Question Type : MCQ Option Shuffling : No  
Correct : 1.0 Wrong : 0.33

IS 800 : 2007 is based on

Options :

1. ✘ Elastic design method
2. ✘ Ultimate load method
3. ✘ Working stress method
4. ✔ Limit state method

Question Number : 47 Question Id : 47 Question Type : MCQ Option Shuffling : No  
Correct : 1.0 Wrong : 0.33

An ohmmeter is a

Options :

1. ✘ moving iron instrument
2. ✔ moving coil instrument
3. ✘ dynamometer instrument
4. ✘ hot wire meter

Question Number : 48 Question Id : 48 Question Type : MCQ Option Shuffling : No  
Correct : 1.0 Wrong : 0.33

For measuring a very high resistance we should use

Options :

1. ✘ Kelvin's double bridge
2. ✘ Wheat stone bridge
3. ✔ Meggar
4. ✘ Schering bridge

Question Number : 49 Question Id : 49 Question Type : MCQ Option Shuffling : No  
Correct : 1.0 Wrong : 0.33

The electrical power to a meggar is provided by

Options :

1. ✘ battery
2. ✔ permanent magnet D.C. generator
3. ✘ AC generator
4. ✘ either AC or DC generator

Question Number : 50 Question Id : 50 Question Type : MCQ Option Shuffling : No  
Correct : 1.0 Wrong : 0.33

In a meggar, controlling torque is provided by

Options :

1. ✘ spring
2. ✘ gravity
3. ✔ coil
4. ✘ eddy current

Question Number : 51 Question Id : 51 Question Type : MCQ Option Shuffling : No  
Correct : 1.0 Wrong : 0.33

The operating voltage of a meggar is about

Options :

1. ✘ 6 V
2. ✘ 12 V
3. ✘ 40 V
4. ✔ 100 V

Question Number : 52 Question Id : 52 Question Type : MCQ Option Shuffling : No  
Correct : 1.0 Wrong : 0.33

The prescribed per capita water demand for small cities and towns is

Options :

1. ✔ 135 litres per capita per day
2. ✘ 200 litres per capita per day
3. ✘ 150 litres per capita per day
4. ✘ 180 litres per capita per day

Question Number : 53 Question Id : 53 Question Type : MCQ Option Shuffling : No  
Correct : 1.0 Wrong : 0.33

The spacing between two bars in medium size screen ranges from

Options :

1. ✘ 20 – 50 mm
2. ✔ 20 – 40 mm
3. ✘ 10 – 20 mm
4. ✘ 10 – 30 mm

Question Number : 54 Question Id : 54 Question Type : MCQ Option Shuffling : No

Correct : 1.0 Wrong : 0.33

In small water supplies such as army troops, private plants and swimming pools, the most common disinfectants used are

Options :

1. ✘ chlorine dioxide and potassium permanganate
2. ✘ ozone and uv rays
3. ✔ iodine and bromine
4. ✘ chlorine and bromine

Question Number : 55 Question Id : 55 Question Type : MCQ Option Shuffling : No

Correct : 1.0 Wrong : 0.33

The air pollution control device, cyclone is used for the removal of

Options :

1. ✘ 100  $\mu\text{m}$  particles
2. ✔ 10  $\mu\text{m}$  particles
3. ✘ 50  $\mu\text{m}$  particles
4. ✘ 2.5  $\mu\text{m}$  particles

Question Number : 56 Question Id : 56 Question Type : MCQ Option Shuffling : No

Correct : 1.0 Wrong : 0.33

The 20 dBA noise level is how many times more powerful than 1 dBA noise level?

Options :

1. ✘ 10 times
2. ✘ 20 times
3. ✔ 100 times



4. ✘ 200 times

Question Number : 57 Question Id : 57 Question Type : MCQ Option Shuffling : No

Correct : 1.0 Wrong : 0.33

The percentage contribution of CO<sub>2</sub> to green house effect is

Options :

1. ✔ 50

2. ✘ 30

3. ✘ 18

4. ✘ 10

Question Number : 58 Question Id : 58 Question Type : MCQ Option Shuffling : No

Correct : 1.0 Wrong : 0.33

Which of the following is not a valid category of impact printers?

Options :

1. ✘ Dot-matrix printers

2. ✘ Line printers

3. ✘ Drum printers

4. ✔ Ink-jet printers

Question Number : 59 Question Id : 59 Question Type : MCQ Option Shuffling : No

Correct : 1.0 Wrong : 0.33

Which of the following is not true about RAM?

Options :

1. ✘ Random access memory

2. ✘ Read write memory

3. ✘ Volatile memory

4. ✔ Sequential access memory

Question Number : 60 Question Id : 60 Question Type : MCQ Option Shuffling : No

Correct : 1.0 Wrong : 0.33

Which of the following is not a component of Central Processing Unit (CPU)?

Options :

1. ✘ Arithmetic and Logic Unit (ALU)

2. ✘ Control Unit (CU)
3. ✘ Registers
4. ✔ Random Access Memory (RAM)

Question Number : 61 Question Id : 61 Question Type : MCQ Option Shuffling : No  
Correct : 1.0 Wrong : 0.33

ASCII stands for \_\_\_\_\_

Options :

1. ✘ American Standard Code for Immediate Interchange
2. ✘ American Standard Code for Immediate Information
3. ✔ American Standard Code for Information Interchange
4. ✘ Australian Standard Code for Information Interchange

Question Number : 62 Question Id : 62 Question Type : MCQ Option Shuffling : No  
Correct : 1.0 Wrong : 0.33

The binary representation of 99.25 is \_\_\_\_\_

Options :

1. ✘  $(1100011.10)_2$
2. ✔  $(1100011.01)_2$
3. ✘  $(1101011.10)_2$
4. ✘  $(1000011.11)_2$

Question Number : 63 Question Id : 63 Question Type : MCQ Option Shuffling : No  
Correct : 1.0 Wrong : 0.33

Considering X as a binary variable, the Boolean expression  $X + 1$  is equivalent to

Options :

1. ✘ X
2. ✔ 1
3. ✘ 0

4. ✘ X'

Question Number : 64 Question Id : 64 Question Type : MCQ Option Shuffling : No

Correct : 1.0 Wrong : 0.33

The 2's compliment of the binary number  $(11001001)_2$  is

Options :

1. ✘  $(00110110)_2$

2. ✘  $(00111111)_2$

3. ✔  $(00110111)_2$

4. ✘  $(10110111)_2$

Question Number : 65 Question Id : 65 Question Type : MCQ Option Shuffling : No

Correct : 1.0 Wrong : 0.33

Which of the following is a real-time operating system?

Options :

1. ✘ Mac OS X

2. ✘ Linux

3. ✘ Windows 7

4. ✔ Windows CE

Question Number : 66 Question Id : 66 Question Type : MCQ Option Shuffling : No

Correct : 1.0 Wrong : 0.33

Class 'A' IP addresses use \_\_\_\_\_ bits for Network ID.

Options :

1. ✔ 8

2. ✘ 16

3. ✘ 24

4. ✘ 32

Question Number : 67 Question Id : 67 Question Type : MCQ Option Shuffling : No

Correct : 1.0 Wrong : 0.33

Which of the following is not a Web browser?

Options :

1. ✘ Chrome

2. ✘ Internet Explorer

3. ✘ Opera

4. ✔ Hadoop

Question Number : 68 Question Id : 68 Question Type : MCQ Option Shuffling : No

Correct : 1.0 Wrong : 0.33

An area of 64 square kilometre is represented by 256 square centimetre on a map. The R. F. of the scale is

Options :

1. ✘  $1/4$

2. ✔  $1/50000$

3. ✘  $1/2$

4. ✘  $1/5000$

Question Number : 69 Question Id : 69 Question Type : MCQ Option Shuffling : No

Correct : 1.0 Wrong : 0.33

An involute profile is used in

Options :

1. ✘ pulleys

2. ✘ cams

3. ✘ chains

4. ✔ gears

Question Number : 70 Question Id : 70 Question Type : MCQ Option Shuffling : No

Correct : 1.0 Wrong : 0.33

If a line is parallel to H.P. and inclined to V.P., its front view will be

Options :

1. ✔ a line of smaller dimension

2. ✘ a line of larger dimension

3. ✘ a line of same dimension

4. ✘ a point

Question Number : 71 Question Id : 71 Question Type : MCQ Option Shuffling : No

Correct : 1.0 Wrong : 0.33

In multi-view projections, the xy line is known as

Options :