

# R.R.B.

**JE Question paper 2011**

## Based on Memory

- Which of the following states of India has the longest coastline?
  - 1) Kerala
  - 2) Gujarat
  - 3) Tamil Nadu
  - 4) Andhra Pradesh
- Where was the capital of Ranjit Singh, the king of Punjab, located?
  - 1) Peshawar
  - 2) Amritsar
  - 3) Lahore
  - 4) Rawalpindi
- The fundamental duties are enshrined in which Article of the Indian Constitution?
  - 1) Article 51 A
  - 2) Article 50 A
  - 3) Article 50 B
  - 4) Article 51 B
- The mineral structure of diamond is
  - 1) Zinc
  - 2) Nickel
  - 3) Nitrogen
  - 4) Carbon
- Which part of the body is affected by Jaundice?
  - 1) Small intestine
  - 2) Liver
  - 3) Stomach
  - 4) Pancreas
- Which country of the world has the largest number of post offices?
  - 1) France
  - 2) China
  - 3) India
  - 4) Japan
- Uttar pradesh tops in the production of –in India.
  - 1) sugar cane
  - 2) rice
  - 3) barley
  - 4) wheat
- The safe temperature to keep eatables fresh in refrigerator is
  - 1) 4°C
  - 2) 0°C
  - 3) 18°C
  - 4) 10°C
- The instrument used to measure the blood pressure of human body is–
  - 1) Barometer
  - 2) Altimeter
  - 3) Sphygmomano meter
  - 4) Tachometer

- 10.** Automatic wrist watches get energy from–
- 1) twist in spring
  - 2) liquid crystal
  - 3) kinetic energy
  - 4) movement of our hands
- 11.** When a television is switched on
- 1) We listen the sound first and then see the picture
  - 2) We see the picture first and then listen sound
  - 3) It depends on the TV manufacturing company
  - 4) We get audio and visual at the same time
- 12.** Goitre in human body is caused due to deficiency of–
- 1) Iodine
  - 2) Phosphorus
  - 3) Nitrogen
  - 4) Calcium
- 13.** Who sent Huensant as ambassador in the court of Harsha?
- 1) Fu Chen-Chu
  - 2) Tai Sung
  - 3) Tung Cuan
  - 4) None of these
- 14.** Who wrote Akbarnama?
- 1) Faizi
  - 2) Abdul Rahim Khankhana
  - 3) Abul Fazal
  - 4) Abdul Kadir Badayun
- 15.** Which metal is generally used to make electro magnets?
- 1) Copper
  - 2) Nickel
  - 3) Iron
  - 4) Cobalt
- 16.** Artificial silk is called–
- 1) Rayon
  - 2) Dacron
  - 3) Fibre glass
  - 4) Nylon
- 17.** Dynamo converts–
- 1) electrical energy into mechanical energy
  - 2) High voltage into low voltage
  - 3) Low voltage into high voltage
  - 4) Mechanical energy into electrical energy
- 18.** The instrument used to measure the electric current is
- 1) Barometer
  - 2) Altimeter
  - 3) Ammeter
  - 4) Anemometer
- 19.** The best conductor of electricity is
- 1) Aluminium
  - 2) Copper
  - 3) Iron
  - 4) Silver
- 20.** Urea supplies– to the plants.
- 1) Calcium
  - 2) Phosphorus
  - 3) Potassium
  - 4) Nitrogen

- 21.** Mica is used in–
- 1) Furnace
  - 2) Electric industry
  - 3) Steel Industry
  - 4) Glass Manufacturing
- 22.** Which of the following is a physical change?
- 1) Burning of cooking gas
  - 2) Fermentation of milk
  - 3) Digestion of food
  - 4) Dissolution of sugar in water
- 23.** The chemical compound used in photography is
- 1) Aluminium Hydroxide
  - 2) Silver Bromide
  - 3) Potassium Nitrate
  - 4) Sodium Chloride
- 24.** What causes cholera?
- 1) Bacteria
  - 2) Virus
  - 3) Fungus
  - 4) Algae
- 25.** An apparatus for viewing objects lying above the eye level of the observer and whose direct vision is obstructed is known as–
- 1) Photometer
  - 2) Periscope
  - 3) Planimeter
  - 4) Spectrometer
- 26.** Which atom has only one electron?
- 1) Potassium
  - 2) Nitrogen
  - 3) Oxygen
  - 4) Hydrogen
- 27.** What the electrode that is connected to the negative pole of the battery is called?
- 1) Cathode
  - 2) Electroplate
  - 3) Ion
  - 4) Anode
- 28.** The organic acid present in vinegar is–
- 1) butanoic acid
  - 2) propanoic acid
  - 3) methanoic acid
  - 4) ethanoic acid
- 29.** Which of the following is an example of fossil fuel?
- 1) Coke
  - 2) Natural gas
  - 3) Coal gas
  - 4) Producer gas
- 30.** Water gas consists of
- 1) a mixture of carbon monoxide and hydrogen
  - 2) water vapour and coal dust
  - 3) a mixture of carbon monoxide and nitrogen
  - 4) water vapour and methane
- 31.** A body strike the floor vertically with a velocity  $u$  and rebounds at the same speed. The change of speed would be–
- 1)  $3u$
  - 2) Zero
  - 3)  $u$
  - 4)  $2u$

- 32.** Which of the following is different from others?  
1) Speed                      2) Time                      3) Density                      4) Force
- 33.** Momentum has the same unit as that of—  
1) torque                                      2) couple  
3) impulse                                      4) moment of momentum
- 34.** What is the momentum of a man of mass 75 kg when he walks with a uniform velocity of 2m/s?  
1) 50 kg m/s                      2) 75 kg m/s                      3) 100 kg m/s                      4) 150 kg/s
- 35.** At the centre of the earth, the value of g becomes—  
1) infinity                      2) unity                      3) zero                      4) None of these
- 36.** Two unequal masses possess the same momentum, then the kinetic energy of the heavier mass is .....the kinetic energy of the lighter mass.  
1) smaller than                                      2) greater than  
3) same as                                      4) none of these
- 37.** 15 Bulbs of 60 W each, run for 6 hours daily and a fridge of 300 W runs for 5 hours daily. Find the forthrightly bill at the rate of 30 paise per unit.  
1) Rs.31.05                      2) Rs.45.55                      3) Rs.62.10                      4) Rs.75.10
- 38.** Sheaths are used in cables to—  
1) Provide proper insulation                      2) Provide mechanical strength  
3) Prevent ingress of moisture                      4) None of these
- 39.** For the stable operation of interconnected system, the passive element that can be used as interconnecting element is  
1) Reactor                                      2) Resistor  
3) Capacitor                                      4) Resistor and Capacitor
- 40.** The insulation resistance of a cable of length 10 km is  $1M\Omega$ , its resistance for 50 km length will be—  
1)  $M\Omega$                       2)  $5 M\Omega$                       3)  $0.2 M\Omega$                       4)  $10 M\Omega$
- 41.** The rate of change of momentum is directly proportional to—  
1) Force                      2) Inertia                      3) Moment                      4) None of these
- 42.** If four  $80 \mu F$  capacitors are connected in parallel, the net capacitance is—  
1)  $20 \mu F$                       2)  $80 \mu F$                       3)  $160 \mu F$                       4)  $320 \mu F$

- 43.** The transformer used to decrease the magnitude of the alternating voltage is a–
- 1) step-up transformer
  - 2) step-down transformer
  - 3) step-in transformer
  - 4) step-out transformer
- 44.** When two bodies are rubbed against each other
- 1) They acquire equal and similar charges
  - 2) They acquire equal and opposite charges
  - 3) They acquire unequal and similar charges
  - 4) They acquire unequal and opposite charges
- 45.** Lightning is caused in the sky due to the flow of charge between–
- 1) two oppositely charged clouds
  - 2) two similarly charged clouds
  - 3) one neutral and one charged cloud
  - 4) None of the these
- 46.** Which of these converts sunlight directly into electrical energy?
- 1) Solar cooker
  - 2) Solar cell
  - 3) Solar furnace
  - 4) Solar water heater
- 47.** Electric charge can flow through–
- 1) insulators
  - 2) conductors
  - 3) both insulators and conductors
  - 4) neither conductors nor insulators
- 48.** The electric current which changes its direction after fixed intervals of time is called–
- 1) induced current
  - 2) direct current
  - 3) alternating current
  - 4) None of these
- 49.** A device used to stabilise the voltage supplied by electric supply station is a–
- 1) dynamo
  - 2) transformer
  - 3) ammeter
  - 4) generator
- 50.** Silver is a
- 1) magnetic substance
  - 2) good conductor of electricity
  - 3) bad conductor of electricity
  - 4) none of these
- 51.** An instrument used to observe heavenly bodies is the–
- 1) telescope
  - 2) camera
  - 3) microscope
  - 4) periscope
- 52.** The maximum percentage in the atmosphere is of
- 1) Oxygen
  - 2) Nitrogen
  - 3) Carbon dioxide
  - 4) Helium

- 53.** What is the function of Ozone layer?
- 1) Prevents harmful infra-red rays of the sun from reaching the earth
  - 2) Prevents radiation escaping the earth, hence keeping it warm
  - 3) It is essential for rainfall
  - 4) It filters harmful ultra-violet rays of the sun
- 54.** In the International system of measurement, the 'Kelvin' is the unit of–
- 1) mass
  - 2) temperature
  - 3) electric current
  - 4) air
- 55.** The Sanchi Stupa was constructed by–
- 1) Chandragupta
  - 2) Ashoka
  - 3) Kunal
  - 4) Harshavardhan
- 56.** The first atomic power plant was started in India at–
- 1) Narora
  - 2) Tarapur
  - 3) Rawat bhata
  - 4) None of these
- 57.** To conserve the eatables we use–
- 1) Benzoic acid
  - 2) Sodium chloride
  - 3) Sodium carbonate
  - 4) None of these
- 58.** The least polluting fuel is–
- 1) Hydrogen
  - 2) Diesel
  - 3) Kerosene
  - 4) Coal
- 59.** Malaria spreads by–
- 1) Culex mosquito
  - 2) Anopheles mosquito
  - 3) Water borne mosquito
  - 4) None of these
- 60.** Heart disease is caused by increase in–
- 1) Glucose
  - 2) Cholesterol
  - 3) Heparin
  - 4) Haemoglobin
- 61.** Which vitamin helps in clotting of blood?
- 1) Vitamin B
  - 2) Vitamin B<sub>2</sub>
  - 3) Vitamin K
  - 4) Vitamin D
- 62.** The chief source of energy is–
- 1) Vitamin
  - 2) Minerals
  - 3) Carbohydrate
  - 4) Water
- 63.** The chief centre of learning during lord Buddha era was–
- 1) Nalanda
  - 2) Delhi
  - 3) Varanasi
  - 4) Bodh Gaya
- 64.** Mustard is grown in–
- 1) Kharif season
  - 2) Rabi season
  - 3) Jayad season
  - 4) Whole year
- 65.** In case the posts of President and Vice-President lie vacant, who officiates as the President?
- 1) Speaker of the Lok Sabha
  - 2) Chief Justice of India
  - 3) Attorney General of India
  - 4) Chairman of Rajya Sabha

**66.** Magnetic needle directs to—

- 1) East                      2) Sky                      3) North                      4) West

**67.** Lord Buddha got emancipation (Mahapari nirvana) at—

- 1) Kushinagar              2) Lumbini              3) Bodh Gaya              4) Kapilvastu

**68.** The colours on a colour code resistor are green, white, orange and silver. Find the value of resistor.

- 1)  $5.9 \times 10^3 \pm 10\%$                       2)  $59 \times 10^3 \pm 10\%$   
3)  $590 \times 10^3 \pm 10\%$                       4)  $5900 \times 10^2 \pm 10\%$

**69.** The eddy current loss is directly proportional to

- 1) Area of metal                      2) Volume of metal  
3) Length of metal                      4) Weight of metal

**70.** Direction of dynamically induced e.m.f is given by—

- 1) Lenz's law                      2) Flemings right hand rule  
3) Flemings left hand rule                      4) Cork screw rule

**71.** The Rowlatt Act, 1919 empowered the British Government to:

- 1) extend the period of imprisonment for Indians  
2) close down any industrial unit at its discretion  
3) release all the political prisoners by 1921  
4) detain a person for any duration without trial

**72.** The latitude of a place situated on the equator is:

- 1)  $0^\circ$                       2)  $23 \frac{1^\circ}{2}$                       3)  $33 \frac{1^\circ}{2}$                       4)  $66 \frac{1^\circ}{2}$

**73.** The purpose of inclusion of Directive Principles in the Constitution is to establish:

- 1) A Social democracy                      2) Gandhian democracy  
3) Social and economic democracy                      4) Political democracy

**74.** A fisherman is stranded in a lake because the motor of his motor-boat has failed. What should he do to reach the shore?

- 1) He should start walking in his boat towards the shore  
2) He should start throwing the fish he has collected away from the shore  
3) He should lie flat on his boat  
4) He should start throwing the fish he has collected towards the shore

**75.** The elements in the portland cement is/are -

- 1) Silica, Alumina and Magnesia                      2) Lime, Silica and Magnesia  
3) Lime, Silica and Iron oxide                      4) Lime, Silica and Alumina

**76.** The Indian Constitution came into force on -

- 1) January 21, 1950                      2) January 23, 1950  
3) January 26, 1950                      4) January 30, 1950

**77.** Insulin activates in

- 1) Pancreas                      2) Parathyroid                      3) Liver                      4) Pituitary

**78.** The whole structure of the world is regulated by –

- 1) Magnetic force                      2) Gravitational force  
3) Electric force                      4) None of these

**79.** In India State Legislature includes–

- 1) Legislative Assembly & Legislative Council  
2) Legislative Assembly & Council of Ministers  
3) Governor, Legislative Assembly & Legislative Council  
4) Only Legislative Assembly

**80.** Which country is on the top in Gold production?

- 1) China                      2) South Africa                      3) Brazil                      4) Argentina

**81.** Who wrote "Causes of the Indian Mutiny"?

- 1) Sayyid Ahmad Khan                      2) D.H.Buchanan  
3) R.P.Dutt                      4) Chittaranjan Das

**82.** Ranji Trophy and Aga Khan Cup are associated with:

- 1) Cricket and Volleyball                      2) Badminton and Hockey  
3) Cricket and Football                      4) Cricket and Hockey

**83.** Where is the headquarters of the International Red Cross Committee?

- 1) Prague                      2) Geneva                      3) Moscow                      4) Berlin

**84.** Which Article in the Indian Constitution empowers the President to dissolve the Lok Sabha?

- 1) Article 82                      2) Article 84                      3) Article 85                      4) Article 90

**85.** Which among the following countries has made 'euthanasia' legally valid?

- 1) Newzealand                      2) Denmark                      3) Australia                      4) Netherlands



**Directions (86-88): Find the missing in the following series.**

**86.** 6, 10, 27, 52, 153, ?

- 1) 308                      2) 305                      3) 304                      4) 306

**87.** 12, 15, 30, 37.5, 75, ?

- 1)  $93\frac{1}{2}$                       2)  $93\frac{3}{5}$                       3)  $93\frac{3}{4}$                       4)  $93\frac{1}{4}$

**88.** 88, 56, 19, ?

- 1) 8                          2) 7                          3) 10                          4) -8

**Directions (89-91): In the following number series, one of the numbers does not fit into the series. Find the wrong number.**

**89.** 7, 9, 16, 27, 47, 77, 119

- 1) 9                          2) 16                          3) 77                          4) 27

**90.** 4, 5, 12, 39, 160, 804, 4836

- 1) 12                          2) 804                          3) 39                          4) 4836

**91.** 844, 420, 208, 102, 47, 22.5, 9.25

- 1) 420                          2) 208                          3) 47                          4) 22.5

**92.** In a certain code "DEVIL" is written as ABSEFI. How is "OTHER" written in that code?

- 1) LRECO                      2) LQEBO                      3) LWEBU                      4) RWKHU

**93.** In a certain code language "637" means sea is black. "547" means colour is beautiful and "35" means black colour. Which digit in the language means beautiful?

- 1) 6                          2) 4                          3) 5                          4) 3

**Directions (94-98): Read the following information to answer the given questions:**

- (i) A, B, C, D, E and F are six family members.
- (ii) There is one doctor, one lawyer, one pilot, one student and one housewife.
- (iii) There are two married couples in the family
- (iv) F who is a lawyer is father of A.
- (v) B is a pilot and mother of C
- (vi) D is grandmother of C and is a housewife
- (vii) E is father of F and is a doctor
- (viii) C is brother of A

**94.** How many female members are there in the family?

- 1) 3                      2) 2                      3) 3 or 4                      4) None of these

**95.** How is A related to D?

- 1) Granddaughter                      2) Grandson  
3) Son                      4) Either granddaughter or grandson

**96.** Which of the following statements is definitely true?

- 1) A is engineer                      2) E is the father of the pilot  
3) D is the mother of the Pilot                      4) F is the father of the engineer

**97.** Who is student?

- 1) Either C or A                      2) B's son                      3) A                      4) C

**98.** Which of the following is one of the pair of married couples?

- 1) FB                      2) FA                      3) CF                      4) FD

**Directions (99-100): Find the wrong one.**

**99.** 1) River                      2) Pond                      3) Well                      4) Tank

**100.** 1) North                      2) Right                      3) East                      4) South

**101.** The basis for measuring thermodynamic property of temperature is given by–

- 1) zeroth law of thermodynamics                      2) first law of thermodynamics  
3) second law of thermodynamics                      4) third law of thermodynamics

**102.** One watt is equal to–

- 1) 1 Nm/s                      2) 1 N/mt                      3) 1 Nm/t                      4) 1 k Nm/mt

**103.** Work done is zero for the following process–

- 1) constant volume                      2) free expansion  
3) throttling                      4) all of the above

**104.** One calorie in kgm is equal to

- 1) 0.427                      2) 4.27                      3) 42.7                      4) 427

**105.** On volume basis, air contains following parts of Oxygen

- 1) 21                      2) 23                      3) 25                      4) 77

**106.** Universal gas constant is defined as equal to product of the molecular weight of the gas and

- 1) specific heat at constant pressure                      2) specific heat at constant volume  
3) ratio of two specific heat                      4) gas constant

**107.** Strictly speaking all engineering processes are–

- 1) quasi-static
- 2) thermodynamically in equilibrium
- 3) irreversible
- 4) reversible

**108.** In a free expansion process

- 1) work done is zero
- 2) heat transfer is zero
- 3) both (1) and (2)
- 4) work done is zero but heat increases

**109.** Which of the following process is irreversible process

- 1) isothermal
- 2) adiabatic
- 3) throttling
- 4) all of the above

**110.** Minimum work in compressor is possible when the value of adiabatic index  $n$  is equal to–

- 1) 0.75
- 2) 1
- 3) 1.27
- 4) 1.35

**111.** In DC motor the direction of induced emf is opposite to main bars as per–

- 1) fleming's left hand rule
- 2) lenz's law
- 3) fleming's right hand rule
- 4) faradays' law

**112.** The condition for max power developed by the motor–

- 1)  $E_b = v/2$
- 2) Cost losses = variable losses
- 3) Both (1) and
- 4)  $I^2 a R_a = \text{mechanical loss}$

**113.** The  $T_a/I_a$  graph of a DC series motor is a–

- 1) parabola from no load to over load
- 2) straight line through out
- 3) parabola up to full load and a time at over load
- 4) parabola through out

**114.** 220V shunt motor develops torque of 54 nM at armature current of 10A. The torque produced when the armature current is 20A is–

- 1) 54 NM
- 2) 81 N.M
- 3) 108 N.M
- 4) 27 N.M

**115.** Which type of DC generator is used in welding machines–

- 1) series generator
- 2) shunt generator
- 3) cumulatively compound
- 4) differential compound

## ANSWERS

1-2; 2-3; 3-1; 4-4; 5-2; 6-3; 7-4; 8-1; 9-3; 10-1; 11-1; 12-1; 13-2; 14-3; 15-3; 16-1;  
17-4; 18-3; 19-4; 20-4; 21-2; 22-4; 23-2; 24-1; 25-2; 26-4; 27-1; 28-2; 29-1; 30-1;  
31-4; 32-2; 33-3; 34-4; 35-3; 36-1; 37-1; 38-1; 39-3; 40-2; 41-1; 42-4; 43-2; 44-2;  
45-1; 46-2; 47-2; 48-3; 49-2; 50-2; 51-1; 52-2; 53-4; 54-2; 55-2; 56-2; 57-1; 58-1;  
59-2; 60-2; 61-3; 62-3; 63-1; 64-2; 65-2; 66-3; 67-1; 68-2; 69-2; 70-2; 71-4; 72-2;  
73-3; 74-3; 75-3; 76-3; 77-1; 78-2; 79-3; 80-2; 81-2; 82-4; 83-4; 84-2; 85-4; 86-3;  
87-3; 88-4; 89-2; 90-2; 91-3; 92-2; 93-2; 94-4; 95-4; 96-4; 97-1; 98-1; 99-1; 100-2;  
101-1; 102-1; 103-4; 104-1; 105-1; 106-4; 107-3; 108-3; 109-3; 110-2; 111-2; 112-1;  
113-3; 114-3; 115-4.