

Question paper for the appointment on Compassionate Ground of Group 'C' category of JE/TRD

Date: 16.03.22

Max Marks: 100

Time: 3 hrs

Part -1 : General Aptitude

i) Select the correct answer (10 marks):

1. 1 MB of data is equivalent to:
a) 1024 bytes b) 1024 Kb c) 1000 bytes d) 1000 Kb
2. Scientific study of earthquakes is called:
a) Seismology b) Geology c) Astrology d) Virology
3. The HQ of NATO is in :
a) USA b) France c) Belgium d) UK
4. Dilwara Temples are located in:
a) Uttar Pradesh b) Madhya Pradesh c) Rajasthan d) Haryana
5. A can do a work in 15 days and B in 20 days. If they work on it together for 4 days, the fraction of the work left is:
a) $\frac{1}{4}$ b) $\frac{1}{10}$ c) $\frac{1}{15}$ d) $\frac{8}{15}$
6. The angle of elevation of a ladder leaning against the wall and the foot of the ladder is 4.6m away from the wall. The length of the ladder is:
a) 2.3m b) 4.6m c) 7.8m d) 9.2m
7. What should be the next number in the series: 22, 21, 23, 24, 23, ?
a) 22 b) 24 c) 25 d) 26
8. Barometer is used to measure:
a) Acidity b) rainfall c) pressure d) heat
9. Number of players playing in a team of kho kho is:
a) 5 b) 6 c) 7 d) 9
10. 1 km is equal to _____ miles:
a) 1 b) 1.6 c) 2.5 d) 0.6

ii) Match the following antonyms/synonyms : (10 marks)

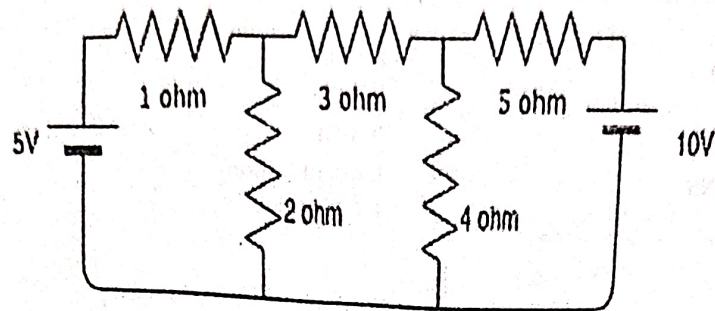
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|---------------|----------------|
| a. Enormous | 1. natural |
| b. Artificial | 2. humble |
| c. Exodus | 3. alert |
| d. Arrogant | 4. dignified |
| e. Feasible | 5. influx |
| f. August | 6. tiny |
| g. watchful | 7. impractical |
| h. repeal | 8. plenty |
| i. abundant | 9. summary |
| j. synopsis | 10. cancel |

iii) Fill in the blanks: (10 marks)

- Knot is a unit of speed of which of the following:
 - Aeroplane
 - Light wave
 - Ship
 - sound waves
- 6 bells commence tolling at intervals of 2,4,6,8,10 and 12 seconds respectively. In 30 minutes, how many times do they toll together:
 - 4
 - 10
 - 15
 - 16
- Which of the following is the non metal that is liquid at room temprature:
 - Phosphorous
 - Bromine
 - Chlorine
 - Helium
- Quartz crystals normally used in quartz clocks is chemically:
 - Silicon dioxide
 - Germanium oxide
 - mixture of a,b
 - Sodium silicate
- National Institute of Virology is in :
 - Pune
 - Kolkata
 - New Delhi
 - Mumbai
- The recently inaugurated 'Namo' stadium is located in:
 - Pune
 - Dharamshala
 - Bengaluru
 - Ahmedabad
- Present Union Minister for Railways is Sh:
 - VK Tripathy
 - Piyush Goyal
 - Ashwini Vaishnaw
 - Suresh Prabhu
- Abhinav Bindra is associated with:
 - Cricket
 - Kho Kho
 - Shooting
 - Boxing
- The HQ of United Nations is at:
 - Geneva
 - Paris
 - New York
 - Washington DC
- The Law of Natural Selection is associated with:
 - Dalton
 - Darwin
 - Kepler
 - Mendel

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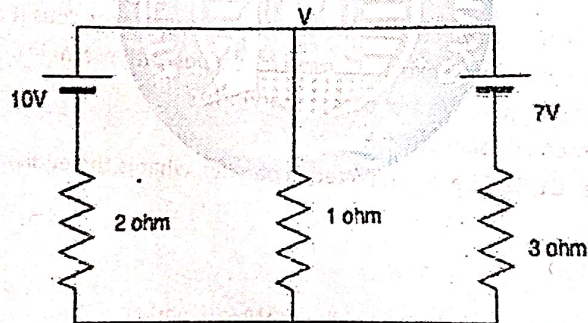
viii) Find the value of the currents I_1 , I_2 and I_3 flowing clockwise in the first, second and third mesh respectively. (10 marks)



IX) Write Short notes on any 2: ($2 \times 5 = 10$ marks)

- What is hysteresis loss?
- Why do we use starter for a DC motor?
- What is slip in an induction motor?

x) Find the node voltage V . (10 marks)



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IV) Write Full forms for the following: (10 marks)

- a. UNESCO
- b. RBI
- c. DOPT
- d. NIMHANS
- e. IRSEE

- f. SOP
- g. AIDS
- h. GDP
- i. CPI (Inflation)
- j. ROM

Part -II- Technical Aptitude

V) Write Full forms for the following: (10 marks)

- a. IGBT
- b. CAM
- c. BIS
- d. VLSI
- e. RLC

- f. ELCB
- g. PF
- h. EHV
- i. IC
- j. THD

VI) Answer the following questions: (Attempt any 4 questions) : $4 \times 2.5 = 10$ marks

- a. What do you mean by dielectric strength and on what factors does it depend?
- b. What are semi conductors, explain its different types with examples.
- c. What do you mean by active and passive networks?
- d. What do you mean by skin effect?
- e. If Capacitances C_1, C_2, C_3 are connected in parallel, what is the equivalent capacitance of the combination.

VII) Answer any 2 questions from the following: ($2 \times 5 = 10$ marks)

- a. A 1000 W heater has a wire length of 5m. What will be the capacity of the heater if the length of the wire is halved?
- b. What is the difference between earth and neutral?
- c. What are the disadvantages of low power factor?

