



RVUNL AEN & JEN Electrical Engineering

Mini Mock Challenge
(August 13th - August 14th 2021)

Questions &
Answer Key

1. In a certain code language, 'MACHINE' is written as 'N5XS3M4'. How will 'PREDICT' be written as in that language?

- A. JI4V3YG
- B. KI2W3YF
- C. KI4W3XG
- D. K34W3XH

Ans. C

2. In a class of 52 children, Bilal's rank is 11 th from the bottom. Salman is 9 ranks above Bilal. What is Salman's rank from the top ?

- A. 37th
- B. 33rd
- C. 38th
- D. 35th

Ans. B

3. 'Star' is related to 'Galaxy' in the same way as 'Flower' is related to ' _____ '.

- A. Jasmine
- B. Blossom
- C. Bouquet
- D. Petal

Ans. C

4. Two statements are followed by three conclusions I, II and III. Assuming these statements to be true, even if they seem to be at variance from commonly known facts, then decide which of the given conclusions logically follows from the given statements.

Statement :

Some plants are trees.

All trees are shrubs.

I. Some shrubs are plants.

II. All shrubs are plants.

III. No shrub are plant.

- A. Only conclusions I and III follow.
- B. Only conclusion III follows.
- C. Only conclusion I follows.
- D. Only conclusions II and III follow

Ans. C

5. The Finance Commission is constituted by the President at the expiration of every _____ year.

- A. tenth
- B. seventh
- C. sixth
- D. fifth

Ans. D

6. India shares its least international boundary with which country?

- A. Pakistan
- B. China
- C. Afghanistan
- D. Nepal

Ans. C

Rajasthan RVUNL
A Technical Course for AEN & JEN (Electrical)

START FREE TRIAL

7. Fatwa-i-Alamgiri, a digest of Muslim laws, was written during the period of which of the following kings?

- A. Nadir Shah
- B. Aurangzeb
- C. Tipu Sultan
- D. Feroz Shah Tughlaq

Ans. B

8. Which of the following is working capital in the farming sector?

- A. tractor
- B. money
- C. threshing machine
- D. land

Ans. B

9. Rathores belong to which clan?

- A. Suryavanshi
- B. Chandravanshi
- C. Agni kula
- D. None

Ans. A

10. Which canal is known as the lifeline of Jodhpur City?

- A. Karni Singh lift Canal
- B. Rajiv Gandhi Lift Canal
- C. Jai Narayan Vyas lift Canal
- D. Guru Jhambeshver Lift Canal

Ans. B

11. Consider the following statement.

- 1) Udaipur and Banswara are the two districts having the highest percentage of Scheduled Tribe.
- 2) Bikaner and Nagaur are the two districts having the lowest percentage of Schedule Tribe.
- 3) Dungarpur district has the highest Schedule Tribe sex ratio.

Which of the following statement/s is/are correct?

- A. 1 and 2
- B. 2 and 3
- C. 1 and 3
- D. All of the above

Ans. D

12. Which of the following restrictions were added in Weddings of Rajputana by the 'Desh Hiteshi Sabha' of Udaipur.

- 1: To limited the expenses and extravagance in the weddings.
- 2: To make a law against Polygamy.

- A. Statement 1
- B. Statement 2
- C. Both Statement 1 & 2
- D. Neither Statement 1 nor 2

Ans. C

Rajasthan RVUNL
A Technical Course for AEN & JEN (Electrical)

START FREE TRIAL

13. Consider the following statements.

- (i) Mirza Raja Jaysingh was the longest reign ruler of Jaipur.
- (ii) Jai Singh was given the title of "Mirza Raja" by Shah Jahan.
- (iii) Famous Sanskrit poet Biharimal resided in Jai Singh's court.

Which of the above statements are true?

- A. (i)
- B. (ii)
- C. (i), (ii)
- D. (i), (ii), (iii)

Ans. C

14. Which statement/statements are correct?

- A. In Rajasthan, we get Tungston from Wolframite and Scheelite ores.
- B. We use Tungston in electricity Bulb, special steel for defence purpose and high-speed cutting tools.
- C. Production area of tungsten in Rajasthan: Jaipur, Bikaner, Hanumangarh.
- D. A) and B)

Ans. D

15. Which statement/statements are correct about Aridisols?

- A. Aridisols are mineral soils mostly found in Dry climatic.
- B. Aridisols are found in association with soils of order Entisols.
- C. The major portion of Aridisols in Rajasthan is covered by the suborder Orthids.
- D. All of above

Ans. D

16. Match the Following.

List – I

- 1) Haridev Joshi
- 2) Jodhpur Sambhag
- 3) Bharatpur Sambhag
- 4) Mohanlal Sukhadia

List – II

- A) Ended the System of Sambhag was Re-started.
 - B) The System of Sambhag was Re-started.
 - C) Consists of 6 districts.
 - D) Smallest Sambhag of Rajasthan.
- A. 1-A; 2-B; 3-C; 4-D
 - B. 1-D; 2-C; 3-B; 4-A
 - C. 1-D; 2-B; 3-C; 4-A
 - D. 1-B; 2-C; 3-D; 4-A

Ans. D

Rajasthan RVUNL
A Technical Course for AEN & JEN (Electrical)

START FREE TRIAL

17. Consider the following statements

- 1) Article 324 - Superintendence, direction and control of elections to be vested in an Election Commission.
- 2) Ashwini Bhagat is the Chief Electoral Officer of Rajasthan.
- 3) The State Election Commission, Rajasthan was incorporated in the month of July, 1994 under Article 243K of the Constitution of India.

Which of the following statements are correct?

- | | |
|------------|---------------------|
| A. 1 and 2 | B. 2 and 3 |
| C. 1 and 3 | D. All of the above |

Ans. D

18. Match the following.

Types of Forts

- 1) Dhaanvan Fort
- 2) Paarikh Fort
- 3) Eran (Anvil) Fort
- 4) Giri (Hilly/Mountain) Fort

Features

- A) A fort situated on a Mountain/Hill.
- B) A fort which is protected by Trench, Thorns and Rocks.
- C) A fort surrounded by a deep moat/trench.
- D) A fort largely surrounded by desert area.

- | | |
|-----------------------|-----------------------|
| A. 1-A; 2-B; 3-C; 4-D | B. 1-D; 2-C; 3-B; 4-A |
| C. 1-D; 2-B; 3-C; 4-A | D. 1-B; 2-C; 3-D; 4-A |

Ans. B

19. When did the Rajasthan state government transfer the district level activities of departments of primary education, agriculture, medical checkup and health, women and children development and social justice to Panchayati Raj Institutions?

- | | |
|---------------------|---------------------|
| A. 2nd October 2010 | B. 2nd October 2011 |
| C. 2nd October 2012 | D. 2nd October 2013 |

Ans. A

20. Who among the following has been awarded by Shaurya Chakra of 2018 from Rajasthan?

- | | |
|-----------------|-------------------|
| A. Vikas Jakhar | B. Bahadur Singh |
| C. Ranjit Singh | D. Jai Ram Jakhar |

Ans. A

21. Who established the Sisodia Clan in Mewar?

- | | |
|----------------|---------------------|
| A. Rana Hammir | B. Rana Ratan Singh |
| C. Rana Sanga | D. Rana Pratap |

Ans. A

22. Who constructed Anasagar Lake?

- A. Arnoraj
- B. Vasudev
- C. Ajayraj
- D. Chandraraj

Ans. A

23. Who was the court scholar of Vigraharaj IV?

- A. Somdev
- B. Ramdev
- C. Harisen
- D. Dharavarsha

Ans. A

24. Generally Coral reefs are found at:

- A. above 18°C in temperate climatic zones
- B. In coastal areas between Cancer and Capricorn
- C. on both eastern and western sides of the continents and islands
- D. On the cold coastal shores

Ans. B

25. Which of the following vitamins is generally excreted by human in urine?

- A. Vitamin B
- B. Vitamin C
- C. Vitamin D
- D. Vitamin E

Ans. B

26. Sulphur dioxide bleaches colouring matter by :

- A. Reduction
- B. Dehydration
- C. Decomposition
- D. Oxidation

Ans. A

27. Instrument used to study the behavior of a vibrating string is :

- A. Baromter
- B. Hydrometer
- C. Hygrometer
- D. Sonometer

Ans. D

28. The name of which disease among the following means 'evil influence of the stars'?

- A. Typhoid
- B. Cholera
- C. Influenza
- D. Plague

Ans. C

29. The average of 16 numbers is 48. The average of the first 7 numbers is 45 and the average of the next 6 numbers is 52. If the 14th number is 11 less than the 15th number and is 5 more than the 16th number, the average of the 15th and 16th number is:

- A. 47.5
- B. 48.5
- C. 49
- D. 48

Ans. D

30. A sum of Rs. 10,000 is invested for 17 months at 8% per annum compounded half yearly. What is the percentage gain at the end of 17 month, nearest to one decimal place?
- A. 12.2% B. 12.0%
C. 11.8% D. 12.4%

Ans. C

31. A cuboid of edges 32 cm, 4 cm and 4 cm is cut to form cubes of edge 4 cm each. What is the sum of total surface areas of all cubes formed?
- A. 768 cm² B. 640 cm²
C. 544 cm² D. 576 cm²

Ans. A

32. The value of $\frac{0.325 \times 0.325 + 0.175 \times 0.175 - 25 \times 0.00455}{5 \times 0.0065 \times 3.25 - 7 \times 0.175 \times 0.025}$ lies between:
- A. 0.35 and 0.45 B. 0.15 and 0.25
C. 0.25 and 0.35 D. 0.05 and 0.15

Ans. C

33. सही विकल्प को चुनकर निम्नलिखित वाक्य के रिक्त स्थान की पूर्ति कीजिए :
- नाच न आवे _____ टेढ़ा
- A. उँगली B. पैर
C. आँगन D. घड़ा

Ans. C

34. |||Common||| निर्देश: प्रत्येक प्रश्न में एक वाक्य दिया हुआ है। कुछ वाक्य बिल्कुल शुद्ध हैं पर कुछ में गलती हैं वाक्य के जिस भाग में गलती हो, (A), (B) या (C) वही भाग उत्तर होगा यदि कोई गलती न हो, तो आपका उत्तर (D) होगा। |||End|||
- (A) रामचरित मानस का प्रणयन सामन्ती काल में / (B) अवश्य हुआ था किन्तु वह युगीन धारा से / (C) सर्वदा असम्पृक्त रहा। / (D) कोई गलती नहीं। A.
- A B.
C. C D. कोई गलती नहीं

Ans. C

35. |||Common||| निर्देश: नीचे दिए गए प्रत्येक प्रश्न में शब्दों का एक समूह मोटे अक्षरों में लिखा गया है दिए गए विकल्पों में से उस विकल्प का चयन कीजिए जो वाक्य में मोटे अक्षरों की जगह ले ले। |||End||| बरसात में मच्छर नाक में दम कर देते हैं।
- A. सोने नहीं B. आवाज करना
C. बहुत परेशान कर D. प्रदूषण फैलना

Ans. C

36. 'ड' और 'ढ़' वर्णों को क्या कहा जाता है?

- A. संघर्षी व्यंजन
B. उत्क्षिप्त व्यंजन
C. अन्तःस्थ व्यंजन
D. द्वित्व व्यंजन

Ans. B

37. |||Common||| **Direction:** Read the sentence to find out whether there is any error in it. The error, if any, will be in one part of the sentence. If the given sentence is correct as it is, mark the answer as No error. Ignore the errors of punctuation if any. |||End||| More often than not, (A)/ selecting a candidate (B)/ results into a power tussle between many parties (C)/ that believe that their respective candidate is the best. (D)/ No error

- A. A
B. B
C. C
D. D
E. No error

Ans. C

38. |||Common||| **Direction:** The following question carries a sentence with two blanks. Choose the most suitable pair of words from the given options that would make the sentence meaningful and complete. |||End||| After a natural spring was discovered in the parched lands of the region, his old abandoned house was _____ into a profitable business venture with a state-of-the-art pump that _____ water.

- A. turned, expiates
B. transformed, emanates
C. changed, exhausts
D. configured, traverses
E. None of these

Ans. B

39. Complete the sentence by putting an appropriate determiner:

You should always carry.....umbrella with you.

- A. a
B. an
C. any
D. a few.

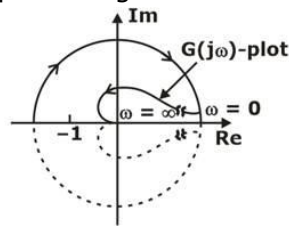
Ans. B

40. |||Common||| In the following question, out of the four alternatives, select the word similar in meaning to the given word. |||End||| Draconian

- A. Contrite
B. Pliable
C. Stringent
D. Ductile
E. None of these

Ans. C

41. Figure given below shows the Nyquist plot of a unity feedback system having open-loop transfer function $G(s)$ with one pole in right half of s -plane. The feedback system is



- A. Stable
- B. Unstable
- C. Marginally
- D. Can't be determined

Ans. B

42. For closed loop system having characteristic equation $S^2 + 4S + 16 = 0$ Resonant frequency in r/sec is

- A. $\sqrt{2}$
- B. 2
- C. $1/\sqrt{2}$
- D. $2\sqrt{2}$

Ans. D

43. The transmission line feeding power on either side of the main transmission line is called

- A. Secondary distribution
- B. Secondary transmission
- C. Primary transmission
- D. Primary distribution

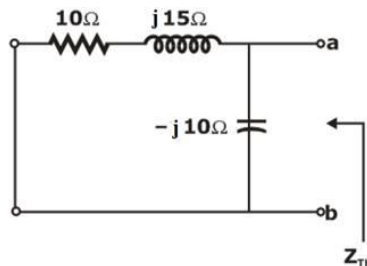
Ans. B

44. Ferranti effect on long overhead lines is experienced when

- A. the line is highly loaded.
- B. the power factor is unity.
- C. the power factor is leading.
- D. corona effect is dominated.

Ans. C

45. If the Thevenin's equivalent voltage seen from port ab is $107.33 \angle -116.56^\circ$ Volts. Maximum power transfer to complex load connected across port ab _____ W



- A. 380
- B. 360
- C. 180
- D. 160

Ans. B

46. A transformer has N_1 primary windings and N_2 secondary windings respectively. Its secondary resistance R_2 referred to primary is

- A. $\left(\frac{N_1}{N_2}\right) R_2$
- B. $\left(\frac{N_1}{N_2}\right)^2 R_2$
- C. $\left(\frac{N_2}{N_1}\right) R_2$
- D. $\left(\frac{N_2}{N_1}\right)^2 R_2$

Ans. B

47. A 10-bit DAC provides an analog output which has maximum value of 10.23 volts. Resolution of the DAC is.
- A. 10 mV B. 15 mV
C. 20 mV D. 40 mV

Ans. A

48. Find minterms and maxterms respectively for the given function
 $f(XYZ) = XY + X'Z$
- A. $f = \sum(1,3,6,7)$ & $f = \pi(0,2,4,5)$ B. $f = \sum(1,4,7,2)$ & $f = \pi(0,3,5,6)$
C. $f = \sum(1,0,3,2)$ & $f = \pi(4,5,6,7)$ D. $f = \sum(1,3,4,5)$ & $f = \pi(0,2,6,7)$

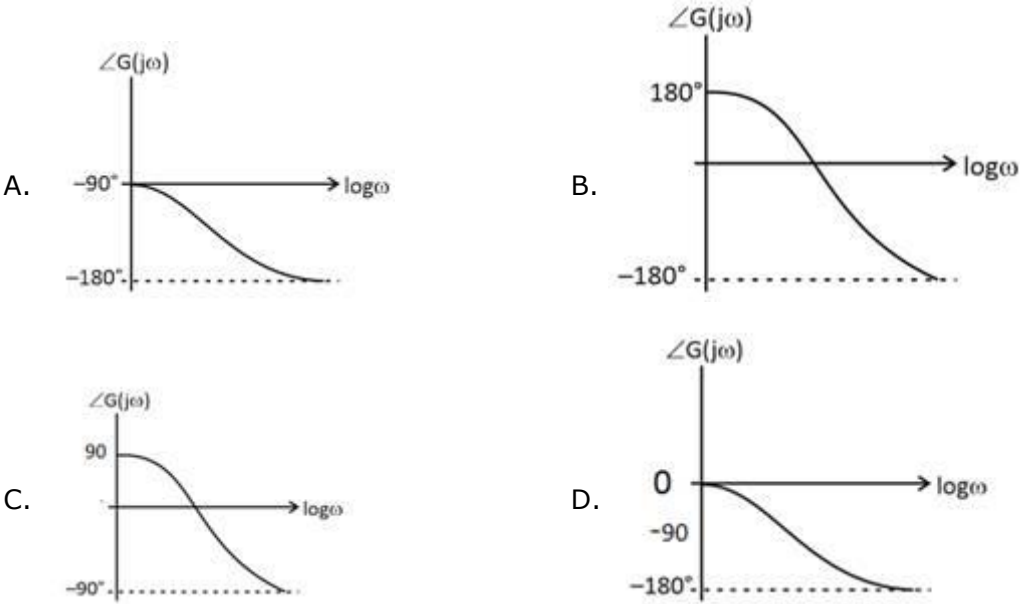
Ans. A

49. The average gate power dissipation for an SCR is 0.5 W. Gate voltage variation is 2 V to 10 V. Which of the following is true?
- A. $V_g = 2 \text{ V}, I_g = 0.25 \text{ A}; V_g = 10 \text{ V}, I_g = 0.05 \text{ A}$
B. $V_g = 2 \text{ V}, I_g = 0.05 \text{ A}; V_g = 10 \text{ V}, I_g = 0.25 \text{ A}$
C. $V_g = 2 \text{ V}, I_g = 10 \text{ A}; V_g = 10 \text{ V}, I_g = 2 \text{ A}$
D. None of the above

Ans. B

50. The Bode phase plot of the given system will be _____.

$$G(s) = \frac{1-sT}{1+sT}$$

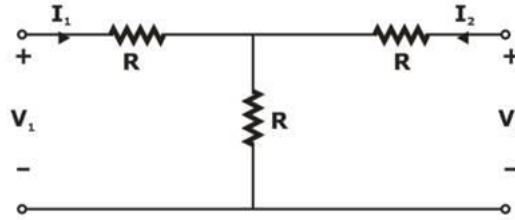


Ans. D

Rajasthan RVUNL
A Technical Course for AEN & JEN (Electrical)

START FREE TRIAL

51. A two-port network is shown in figure. The parameter h_{21} for this network can be given by



- A. $-\frac{1}{2}$
- B. $\frac{1}{2}$
- C. $-\frac{3}{2}$
- D. $\frac{3}{2}$

Ans. A

52. The insulation strength of EHV lines is mainly governed by

- A. Switching overvoltage
- B. Lightning overvoltage
- C. Power frequency overvoltage
- D. Dynamic overvoltage

Ans. A

53. A 5A PMMC meter with an internal resistance of 10 ohm is to be used as a DC voltmeter for range of 500 V. What will be the multiplying factor for the satisfactory operation ?

- A. 100
- B. 10
- C. 1000
- D. 10000

Ans. B

54. In a static over-current relay, inverse time characteristics are obtained by

- A. A differentiating circuit
- B. An integrating circuit
- C. A transistor amplifier
- D. A transistor switches

Ans. C

55. For an SCR, dV/dt protection is achieved using

- A. RL in series with SCR
- B. L in series with SCR
- C. RC in series with SCR
- D. RC across SCR

Ans. D

56. If $x(t) = t^n u(t)$, then the Laplace transform of $x(t)$ is:

- A. $\frac{n!}{s^{n+1}}$
- B. $\frac{n!}{s^n}$
- C. $\frac{n}{s^{n+1}}$
- D. $\frac{n!}{s^{n-1}}$

Ans. A

Rajasthan RVUNL
A Technical Course for AEN & JEN (Electrical)

START FREE TRIAL

57. In a PMMC instrument, the swamping resistor is used to
- A. Increase the damping of the instrument.
 - B. Reduce the current within the limits.
 - C. Compensate for temperature variations.
 - D. Increase the full-scale sensitivity.

Ans. C

58. If $I_{CEO} = 410\mu A$, $I_{CBO} = 5\mu A$ and $I_B = 30\mu A$, then the collector current is.
- A. $415\mu A$
 - B. $440\mu A$
 - C. $445\mu A$
 - D. 2.84 mA

Ans. D

59. When cathode is positive with respect to anode in an SCR, the number of blocked p-n junctions is
- A. 1
 - B. 2
 - C. 3
 - D. 4

Ans. B

60. Consider Fourier transform pair as $e^{-at} \longleftrightarrow \frac{P}{Q + \omega^2}$, where P and Q are function of a.

The value of Q/P is:

- A. $a/2$
- B. a^2
- C. $2a$
- D. 1

Ans. A

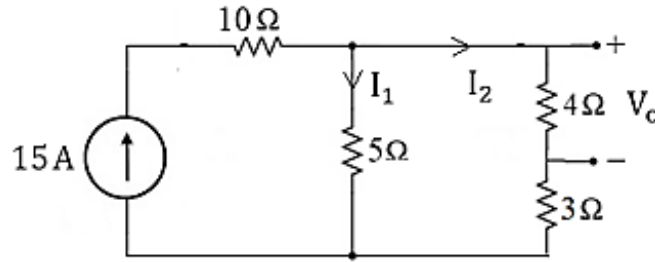
61. Direction of rotation of three phase induction motor can be reversed by
- A. interchanging connections of any two phases
 - B. disconnecting any one phase
 - C. (a) and (b) both
 - D. None of the above

Ans. A

62. An ideal synchronous motor has no starting torque because the
- A. Rotor is made up of salient poles.
 - B. Relative velocity between the stator and rotor mmfs is zero.
 - C. Relative velocity between stator and rotor mmfs is not zero.
 - D. Rotor winding is highly inductive.

Ans. B

63. Determine V_0 (in Volts) in the given network.



- A. 25
- B. 30
- C. 50
- D. 60

Ans. A

64. Match the transfer functions of the second-order systems with the nature of the system given below.

Transfer functions Nature of system

- P. $\frac{15}{s^2 + 5s + 15}$ I. Overdamped
- Q. $\frac{25}{s^2 + 10s + 25}$ II. Critically damped
- R. $\frac{35}{s^2 + 18s + 35}$ III. Underdamped

- A. P-I, Q-II, R-III
- B. P-II, Q-I, R-III
- C. P-III, Q-II, R-I
- D. P-III, Q-I, R-II

Ans. C

65. Which of the following material is preferred as a shunt for extending the range of measurement of a voltmeter ?

- A. Steel
- B. Copper
- C. Platinum
- D. Manganin

Ans. D

66. Synchronous motors are to be used in situations where

- A. The load is constant.
- B. The load is required to be driven at very high speeds
- C. The load is to be driven at constant speed.
- D. The starting torque requirement of the load is very high.

Ans. C

67. A wattmeter reads 25.34 watts. The absolute error in the measurement is -0.11 watt. Determine the true value of power.

- A. 25.23 watts
- B. -25.23 watts
- C. -25.45 watts
- D. 25.45 watts

Ans. D

Rajasthan RVUNL
A Technical Course for AEN & JEN (Electrical)

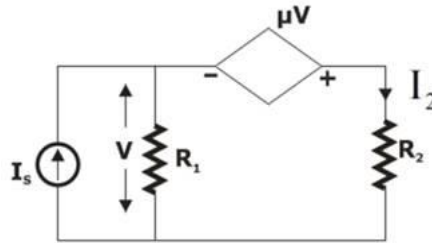
START FREE TRIAL

68. Why npn—transistors are preferred over pnp- transistors?

- A. Leakage current in npn-transistors is less than pnp-transistors.
- B. Mobility of majority carrier in npn- transistors is greater than the mobility of majority carrier in pnp-transistors.
- C. Bias voltage required in npn is less than in pnp-transistors.
- D. Bias voltage required in npn is greater than in pnp-transistors.

Ans. B

69. Find ratio of $\frac{I_2}{I_s}$ for following circuits.



- A. $\frac{(1 + \mu)R_1 + R_2}{(1 + \mu)R_1}$
- B. $\frac{(1 + \mu)R_2 + R_1}{(1 + \mu)R_2}$
- C. $\frac{(1 + \mu)R_2}{R_1 + (1 + \mu)R_2}$
- D. $\frac{(1 + \mu)R_1}{R_2 + (1 + \mu)R_1}$

Ans. D

70. Main function of the fuse is to

- A. Protect the line
- B. Open the circuit
- C. Protect the appliance
- D. Prevent excessive current

Ans. D
