



RVUNL AEN & JEN

Electrical Engineering

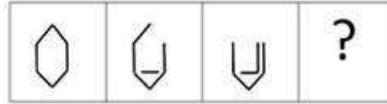
Mini Mock Challenge
(July 29th - July 30th 2021)

Questions &
Answer Key

1. In the following question, select the related word from the given alternatives.
Farmer : Field : : Painter : ?
- A. Gallery
 - B. Stage
 - C. Theatre
 - D. Shop

Ans. A

2. In the following pattern of figures, find the next number?



- A. 
- B. 
- C. 
- D. 

Ans. A

3. Shalini walked 15m towards south, took a right turn and walked 3m. She took a right turn again and walked 15m before stopping. Which direction did Shalini face after stopping?
- A. West
 - B. South
 - C. East
 - D. North
 - E. cannot be determined

Ans. D

4. In the following question, select the word which cannot be formed using the letters of the given word.
IMPRISONMENT
- A. PRISON
 - B. SONNET
 - C. IMPRESSION
 - D. MOMENT

Ans. C

5. The Indian Parliament was attacked by terrorists in which of the following year?
- A. 2000
 - B. 2001
 - C. 2002
 - D. 2003

Ans. B

6. What is the modern name of Drishadvati river (rig Vedic)?

- A. Saraswati
- B. Krumu
- C. Ghagghar
- D. Gomal

Ans. C

7. The battle of Tarain held between which of the following forces?

- A. Ghuri- Chauhan Rajput
- B. Hemu- Chauhan Rajput
- C. Chauhan Rajput- Akbar
- D. None of the above

Ans. A

8. Which of these ages is known as hunting and food gathering stage?

- A. Palaeolithic Age
- B. Mesolithic Age
- C. Neolithic Age
- D. None of these

Ans. A

9. The Indian monument recently inscribed in the UNESCO's World Heritage List is:

- A. Jantar Mantar of Ujjain
- B. Jantar Mantar of Varanasi
- C. Jantar Mantar of Delhi
- D. Jantar Mantar of Jaipur

Ans. D

10. Consider the following statements.

- 1) The literacy rate of Rajasthan is 66.11%.
- 2) Life Expectancy at the birth of Rajasthan is 67.9 years.
- 3) Sex Ratio of Rajasthan is 932 per 1000 males.

With reference to Census 2011, which of the following statement are correct?

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

Ans. A

11. Rajasthan state's first lady patrolling team deployed in which among the following city?

- A. Jaipur
- B. Ajmer
- C. Kota
- D. Udaipur

Ans. D

12. Which among the following railway station is awarded by silver rating for Environment protection?

- A. Jodhpur
- B. Bikaner
- C. Jaipur
- D. Sawai Madhopur

Ans. C

13. Which of the following cities have Municipal Corporation in Rajasthan?

- | | |
|--------------|---------------|
| i. Jaipur | ii. Jodhpur |
| iii. Bikaner | iv. Jaisalmer |
| v. Bharatpur | vi. Ajmer |
| vii. Kota | viii. Bundi |
| ix. Udaipur | x. Barmer |
- A. i, ii, iii, v, vi, vii, ix
B. i, iii, iv, v, viii, ix, x
C. i, ii, iii, v, vi, viii, ix
D. i, ii, v, vi, vii, ix

Ans. A

14. For the safety of women while travelling "Vasundhara Sakhi Mahila Vahan" is launched. It is related to which vehicle?

- | | |
|---------------|----------|
| A. Bus | B. Auto |
| C. E-rickshaw | D. Cycle |

Ans. C

15. Tilwara, a Mesolithic site, is situated on the bank of which river?

- A. Saraswati
- B. Ghaghhar
- C. Luni
- D. Bhogavo

Ans. C

16. 'Battle of Sarangpur' was fought in which year?

- | | |
|---------|---------|
| A. 1438 | B. 1436 |
| C. 1439 | D. 1437 |

Ans. D

17. Who established the city "Udaipur"?

- A. Udai Singh
- B. Rana Vikramaditya
- C. Rana Pratap
- D. None of these

Ans. A

18. The Battle of Haldighati was a battle fought on-

- A. 18 June 1576
- B. 18 June 1577
- C. 18 June 1578
- D. 18 June 1579

Ans. A

19. Match the following.

List – I

DAMS

- 1) Rana Pratap Sagar Dam
- 2) Mahi Bajaj Dam
- 3) Bisalpur Dam
- 4) Jawai Dam

List – II

CHARACTERISTICS

- A) Built by Maharaja Umaid Singh
- B) the major source of drinking water supply to Jaipur
- C) the Second Dam of Chambal Valley Project
- D) Second Largest Dam of Rajasthan

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

Ans. B

20. Rajasthan's first biogas CNG plant is opened in which of the following district recently?

- A. Bhilwara
- B. Banswara
- C. Pratapgarh
- D. Chittorgarh

Ans. A

21. Loamy soil is Important for which crops?

- A. Cotton and cash crops
- B. Tobacco
- C. Bajra
- D. None of above

Ans. C

22. When was the ordinance on Rajasthan State Public Commission promulgated?

- A. 16th August,1949
- B. 17th August,1949
- C. 18th August,1949
- D. 19th August,1949

Ans. A

23. Where would be the headquarter of Maharana Pratap battalion which was recently approved by the home ministry?

- A. Udaipur
- B. Jhalawar
- C. Pratapgarh
- D. Rajsamand

Ans. C

24. Which is known as the lifeline of a Bikaner city?

- A. Kunwar Sen lift Canal
- B. Indira Gandhi Canal
- C. Rajiv Gandhi Lift Canal
- D. None of these

Ans. A

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25. What do you mean by valence number?
- A. No. of electros in the innermost shell of an atom.
 - B. No. of electrons an atom can accommodate
 - C. No. of electron in the outer most shell of an atom.
 - D. No. of protons an atom can accommodate

Ans. C

26. Consider the following statements:

- i. There are three types of combinations, resistances could be arranged.
- ii. Series combination is one such type.

Which of the above statements are correct?

- A. Only i.
- B. Only ii.
- C. Both i and ii.
- D. Neither i nor ii.

Ans. B

27. The time taken by sunlight to reach the Earth is

- A. 8 mins 20 seconds
- B. Less than a second
- C. 24 hours
- D. 365 days

Ans. A

28. Which of the following is the reproducing part of ginger?

- A. Leaf
- B. Root
- C. Stem
- D. Seed

Ans. C

29. If $a - b : b - c : c - d = 1 : 2 : 3$, then what is the value of $(a + d) : c$?

- A. 1 : 2
- B. 2 : 1
- C. 4 : 1
- D. 3 : 1

Ans. B

30. By selling 64 apples for Rs. 60 a person gains 25%. In order to have 40% loss, how many apples shall he sell for RS 36?

- A. 80
- B. 70
- C. 60
- D. 50





Ans. A

31. In a examination, 54% of the candidate passed in science and 42% failed in mathematics. If 32% failed in both subjects, what percentage passed in both subjects?

- A. 56%
- B. 48%
- C. 32%
- D. 44%



Ans. D

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32. If an airplane travels 980 km in 35 min, then how much time it will take in travelling 1470 km?

- A. $1\frac{1}{8}$ hr
B. $1\frac{1}{2}$ hr
C. $7\frac{7}{8}$ hr
D. $1\frac{1}{6}$ hr

Ans. C

33. आकारांत स्त्रीलिंग एकवचन संज्ञा-शब्दों के अन्त में 'एँ' लगाने से बना बहुवचन शब्द निम्न में से कौन-सा है?

- A. तिथियाँ
B. गतियाँ
C. माताएँ
D. जातियाँ

Ans. C

34. हरिशंद्र शब्द का निम्न में से कौन सा सही संधि विच्छेद है?

- A. हरीश + चंद्र
B. हरि : + चंद्र
C. हरिश् + चन्द्र
D. हरि + शचंद्र

Ans. B

35. "वीर" का स्त्रीलिंग शब्द क्या है?

- A. विरावती
B. वीरांगना
C. वारांगना
D. विरांगना

Ans. B

36. स्वर्गगत निम्नलिखित में से कौन सा समास है।

- A. कर्म तत्पुरुष
B. करण तत्पुरुष
C. अधिकरण तत्पुरुष
D. इनमें से कोई नहीं

Ans. A

37. **Direction:** Answer the following questions by selecting the correct/most appropriate options.

While reading for comprehension, we understand that some pairs are examples of homograph. Which one of the following is a homograph?

- A. lead [metal]/lead [give direction]
B. lead [give direction]/dead [mortal]
C. mail[post]/male[gender]
D. warm/tepid [being neither too hot nor too cold]

Ans. A

38. Fill in the blank with the appropriate word:

She entered the school in the _____ part of the semester.

- A. Latter
- B. Late
- C. Later
- D. Lately

Ans. C

39. Complete the following sentence by choosing the appropriate word from the given options:

The municipal corporation was unable to give a valid reason for the _____ drains.

- A. overflowing
- B. beautiful
- C. clean
- D. well-maintained

Ans. A

40. Choose the correct option:

- A. Hunger is the good sauce.
- B. Hunger is the better sauce.
- C. Hunger is the best sauce.
- D. Hunger is the more good sauce.

Ans. C

41. The daily energy produced in a thermal power station is 720 MWh at a load factor of 0.6. What is the maximum demand of the station?

- A. 50 MW
- B. 30 MW
- C. 72 MW
- D. 720 MW

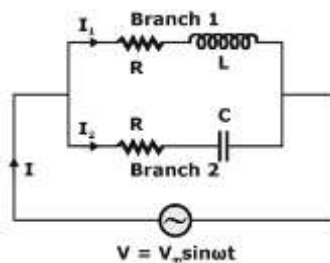
Ans. A

42. In coal-fired thermal power-stations, what are the electrostatic precipitators used for?

- A. To remove dust particles setting on the bus bar conductors in the station switch yard
- B. To condense steam by electrostatic means
- C. To keep the air heaters clean
- D. To collect the dust particles from the flue gases

Ans. D

43. Consider a parallel circuit as shown in figure below,



Let ϕ_1 and ϕ_2 be the magnitude of impedance angle of branch 1 and 2 respectively & given that $C \gg L$. Then which of the following relation is true.

- A. $\phi_1 = \phi_2$
- B. $\phi_1 > \phi_2$
- C. $\phi_1 < \phi_2$
- D. cannot be determined

Ans. B

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44. A conductor of 0.5 mm diameter wire has a resistance of 400 Ω. Find the resistance of the same length of wire if it’s diameter were doubled.

- A. 150 Ω
- B. 50 Ω
- C. 100 Ω
- D. 200 Ω

Ans. C

45. What will be the value of x(2), if X(z) is the z-transform of x[n] and ROC is $|z| > 1/5$.

$$X(z) = \frac{1 + 2z^{-1}}{1 + \frac{1}{5}z^{-1}}$$

- A. -9/25
- B. 20/11
- C. 1
- D. 9/5

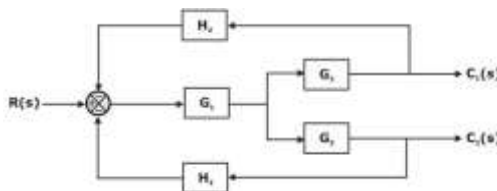
Ans. A

46. The characteristic equation of a system is $s^2 + 5s + 6$. The largest time constant is:

- A. 2
- B. 3
- C. 1/2
- D. 1/3

Ans. C

47. Consider the block diagram shown below:

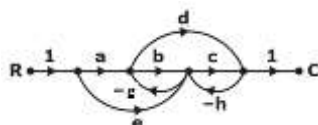


The transfer function $\frac{G(s)}{R(s)}$ will be

- A. $\frac{G_1 G_2}{1 + G_1 G_2 H_2^2}$
- B. $\frac{G_1 G_2}{1 + G_1 G_2 H_2 + G_1 G_3 H_2}$
- C. $\frac{G_1 G_2}{1 + G_1 G_2 H_2 + G_3 H_2}$
- D. $\frac{G_1 G_2}{1 + G_1 G_2 H_2 + G_3}$

Ans. B

48. The transfer function $\left(\frac{C}{R}\right)$ of the below signal flow graph is given by:



- A. $\frac{abc + ad + ce}{1 + ch + bg + dgh}$
- B. $\frac{abc + ad + ce}{1 + ch + bg - dgh}$
- C. $\frac{abc + ad(1 + bg + ch) + ce}{1 + ch + bg}$
- D. $\frac{abc + ad(1 + bg + ch) + ce}{1 + ch + bg}$

Ans. B

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49. The main advantage of the Decoupled Load Flow (DLF) as compared to the NR method is:
- A. number of iterations are less
 - B. accuracy is more
 - C. reduced memory requirements in storing the Jacobian elements
 - D. All of the above

Ans. C

50. A single-phase transformer rated for 220/440 V, 50 Hz operates at no load at 220 V, 40 Hz. This frequency operation at rated voltage results in which one of the following?
- A. Increase of both eddy-current and hysteresis losses
 - B. Reduction of both eddy-current and hysteresis losses
 - C. Reduction of hysteresis loss and increase in eddy-current loss
 - D. Increase of hysteresis loss and no change in the eddy-current loss

Ans. D

51. if the voltage controlled bus is treated as a load bus the which of the following limit would be violated?
- A. phase angle
 - B. reactive power
 - C. active power
 - D. voltage

Ans. B

52. Ferrimagnetic material have:
- A. Low resistivity
 - B. High eddy current loss
 - C. Low curie temperature
 - D. High permeability

Ans. D

53. In a ACSR conductor why is grease put between steel and aluminium conductors?
- A. To reduce corrosion by electrolytic action between zinc(galvanizing agent on steel) and aluminium.
 - B. To reduce friction between the strands
 - C. To reduce leakage of current from aluminium strands to steel strands
 - D. To eliminate air pockets

Ans. A

54. What is the probability of finding an electron at fermi energy level?
- A. 100%
 - B. 50%
 - C. 0 %
 - D. 33%

Ans. B

55. Nominal-n model is quite suitable for analyzing the performance of transmission line of
- A. 50Km length
 - B. 180Km length

- C. 350Km length
- D. All of the above

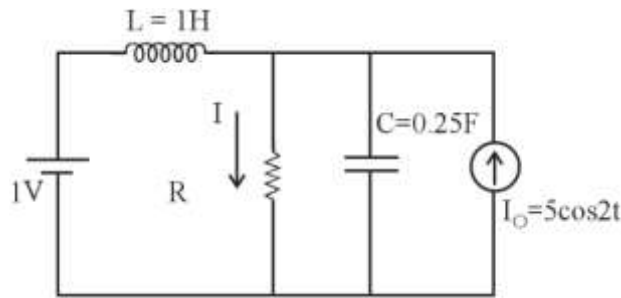
Ans. B

56. A 200/1 A CT has primary winding current of 100 A and secondary winding current of 0.45 A . Then find ratio correction factor.

- A. 2.54
- B. 1.11
- C. 2.22
- D. 1.55

Ans. B

57. In the circuit given below, if current through the resistance R is given by $I = 1 + 5\cos 2t$, then find the value of R.



- A. 1Ω
- B. 6Ω
- C. 2Ω
- D. Cannot be determined

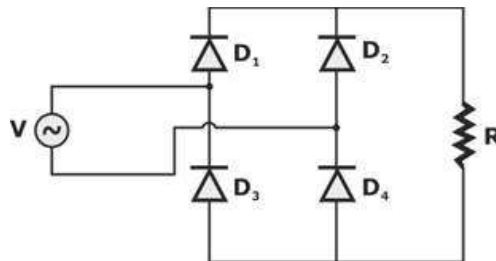
Ans. A

58. The SiO_2 layer in an IC acts as a/an

- A. Resistor
- B. An insulating layer
- C. Mechanical output
- D. None

Ans. B

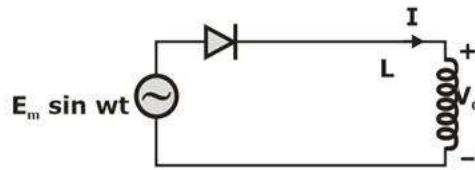
59. In the single-phase diode bridge rectifier shown in figure, the load resistor is $R = 75\Omega$. The source voltage is $V = 300 \sin \omega t$, where $\omega = 2\pi \times 50$ radians per second. The power dissipated in the load resistor is _____.



- A. 400 W
- B. 300 W
- C. 600 W
- D. 1200 W

Ans. C

60. A single-phase half wave diode rectifier with L load as shown in the figure below. What will be the RMS value of rectified current? {Given : $\frac{V_m}{\omega L} = K$ }



- A. K A
- B. 0 A
- C. 1.225 K A
- D. 0.707 K A

Ans. C

61. Full scale deflecting torque of 1A Moving Iron ammeter is $5 \times 10^{-5} \text{ N-m}$. The rate of change of self-inductance of the instrument at full scale in "μH per radian" is

- A. 8
- B. 100
- C. 40
- D. 10

Ans. B

62. DVM is the abbreviation for which of the following?

- A. Digital voltmeter
- B. Digital volume meter
- C. Digital voltage meter
- D. Digital vacuum meter

Ans. A

63. In a BJT, as the base width decreases. Which one of the following parameters will decrease?

- A. Emitter injection efficiency
- B. The base transport factor
- C. Common emitter current gain
- D. The magnitude of the early voltage

Ans. D

64. A signal $x_1(t) = 20 \cos(200\pi t)$ is sampled at 150 Hz and $x_2(t) = 20 \cos(100\pi t)$ is sampled at f_s . What is the value of f_s so that both the sequences of samples will be identical.

- A. 50 Hz
- B. 200 Hz
- C. 150 Hz
- D. 100 Hz

Ans. C

65. An analog voltage signal whose highest frequency is 1 kHz is to be digitally coded with a resolution of 0.01% covering the voltage 0 – 10V. Choose the correct statements?

- (i) The minimum sampling rate is 2 kHz
- (ii) Minimum number of bits in the digital code is 13
- (iii) Analog value of LSB is 1 mV

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

Ans. B

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66. A d.c. series motor is running at rated speed without any additional resistance in series. If an additional resistance is placed in series, the speed of motor
- A. increases
 - B. decreases
 - C. remains same
 - D. none of the above

Ans. B

67. A 200/400 V, 50 Hz, two-winding transformer is rated at 20 kVA. Its windings are connected as an auto-transformer of rating 200/600 V. A resistive load of 12Ω is connected to the high voltage (600 V) side of the auto-transformer. The value of equivalent load resistance (in Ohm) as seen from low voltage side is _____.
- A. 1.78
 - B. 1.22
 - C. 1.33
 - D. 1.58

Ans. C

68. A voltmeter with an internal resistance of 4750Ω issued to measure the voltage across a resistance of 600Ω connected in series with a DC series of internal resistance 400Ω . What is the error in measurement?
- A. +5%
 - B. -5%
 - C. +10%
 - D. -10%

Ans. B





69. A stove element draws 15 A when connected to 230 V line. How long does it take to consume one unit of energy?
- A. 3.45 h
 - B. 2.16 h
 - C. 1.0 h
 - D. 0.29 h

Ans. D

70. On both ends of carbon-nanotubes (CNT), which carbon nanostructure is placed?
- A. Graphite
 - B. Diamond
 - C. C_{60}
 - D. Benzene



Ans. C

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