

**PUNJAB STATE FEDERATION OF
COOPERATIVE SUGAR MILL (LTD.)
POST: ASSTT.ENGINEER (ELECTRICAL)
QUESTION BOOKLET AND ANSWER KEY
SERIES (A)
FOR RECRUITMENT TEST HELD ON 01-03-2026
(MORNING)**

1. 'ਕਣਕ ਨਾਲ ਬੋਰੀ ਭਰੋ' ਵਾਕ ਵਿੱਚ 'ਕਣਕ' ਸ਼ਬਦ ਨਾਂਵ ਹੈ। ਇਸਦੀ ਕਿਸਮ ਦੱਸੋ:
A) ਆਮ ਨਾਂਵ B) ਖਾਸ ਨਾਂਵ C) ਵਸਤਵਾਚਕ ਨਾਂਵ D) ਭਾਵਵਾਚਕ ਨਾਂਵ
2. 'ਔਹ ਕੌਣ ਆ ਰਿਹਾ ਹੈ?' ਵਾਕ ਵਿੱਚ 'ਔਹ' ਸ਼ਬਦ ਪੜਨਾਂਵ ਹੈ। ਇਸਦੀ ਕਿਸਮ ਦੱਸੋ:
A) ਪੁਰਖਵਾਚਕ B) ਨਿਜਵਾਚਕ C) ਨਿਸਚੇਵਾਚਕ D) ਅਨਿਸਚਿਤ ਵਾਚਕ
3. 'ਮੇਲੇ ਵਿੱਚ ਬਹੁਤ ਲੋਕ ਆਏ' ਵਾਕ ਵਿੱਚ 'ਬਹੁਤ' ਸ਼ਬਦ ਵਿਸ਼ੇਸ਼ਣ ਹੈ। ਇਸਦੀ ਕਿਸਮ ਦੱਸੋ:
A) ਨਿਸਚੇਵਾਚਕ B) ਪਰਿਮਾਣਵਾਚਕ C) ਗੁਣਵਾਚਕ D) ਸੰਖਿਅਕ ਵਾਚਕ
4. 'ਲੜਕੀ ਬੋਲ ਨਾ ਸਕੀ' ਇਸ ਵਾਕ ਵਿੱਚ ਕਿਰਿਆ ਦੀ ਕਿਸਮ ਦੱਸੋ:
A) ਸਕਰਮਕ B) ਅਕਰਮਕ C) ਸੰਸਰਗੀ D) ਪੜਨਾਵੀਂ
5. ਫਿੱਟੇ ਮੂੰਹ ! ਤੂੰ ਤਾਂ ਸਾਰਾ ਕੰਮ ਖਰਾਬ ਕਰ ਦਿੱਤਾ ਇਸ ਵਾਕ ਵਿੱਚ ਵਿਸਮਿਕ ਦੀ ਕਿਸਮ ਪਛਾਣੋ:
A) ਸਤਿਕਾਰਵਾਚਕ B) ਸੰਬੋਧਨੀ C) ਫਿਟਕਾਰਵਾਚਕ D) ਅਸੀਸਵਾਚਕ
6. ਮੈਂ ਬਜ਼ਾਰੋਂ ਕਾਪੀਆਂ ਵੀ ਖਰੀਦੀਆਂ ਤੇ ਕਿਤਾਬਾਂ ਵੀ ਖਰੀਦੀਆਂ । ਇਸ ਵਾਕ ਦੀ ਕਿਸਮ ਪਛਾਣੋ:
A) ਸਧਾਰਨ B) ਸੰਯੁਕਤ C) ਮਿਸ਼ਰਤ D) ਨਾਂਹਵਾਚਕ
7. ਸਹੀ ਵਾਕ ਚੁਣੋ:
A) ਮੱਝਾਂ ਚੁਗਦੀ ਹੈ। B) ਮੱਝਾਂ ਚੁਗਦੀ ਹਨ। C) ਮੱਝਾਂ ਚੁਗਦੀਆਂ ਹਨ। D) ਮੱਝਾਂ ਚੁਗਦੇ ਹਨ।
8. ਜਿਹੜੀ ਗੱਲ ਆਪ ਨਾਲ ਬੀਤੀ ਹੋਵੇ। ਇਸ ਵਾਕ ਲਈ ਸਹੀ ਸ਼ਬਦ ਚੁਣੋ:
A) ਜੱਗਬੀਤੀ B) ਪਰਬੀਤੀ C) ਲੋਕਬੀਤੀ D) ਹੱਡਬੀਤੀ
9. ਉਹ ਕੇਵਲ ਗਰੀਬ ਹੀ ਨਹੀਂ ਸਗੋਂ ਦੂਖੀ ਵੀ ਹੈ। ਇਸ ਵਾਕ ਵਿੱਚੋਂ ਯੋਜਕ ਪਛਾਣੋ:
A) ਕੇਵਲ B) ਨਹੀਂ C) ਸਗੋਂ D) ਹੈ
10. 'ਉਜਾੜ' ਦਾ ਵਿਰੋਧੀ ਸ਼ਬਦ ਚੁਣੋ:
A) ਰਹਿਤਲ B) ਵਸੋਬਾ C) ਜੰਗਲ D) ਬੀਆਬਾਨ
11. ਸ਼ੁੱਧ ਸ਼ਬਦ ਜੋੜ ਚੁਣੋ:
A) ਛੇਵਾਂ B) ਛੇਮਾਂ C) ਸ਼ੇਮਾਂ D) ਛਿਮਾਂ
12. 'ਨਿਰਮਲ' ਦਾ ਸਮਾਨਾਰਥਕ ਸ਼ਬਦ ਚੁਣੋ:
A) ਮੈਲ B) ਮੈਲਾ C) ਸਾਫ਼ D) ਗੰਧਲਾ
13. 'ਆਹਰੇ ਲੱਗਣਾ' ਮੁਹਾਵਰੇ ਦਾ ਸਹੀ ਅਰਥ ਚੁਣੋ:
A) ਛੇੜਨਾ B) ਘੁੰਮਣਾ C) ਕੰਮ ਕਰਨਾ D) ਵਿਹਲਾ ਫਿਰਨਾ
14. ਸ਼ੁੱਧ ਮੁਹਾਵਰਾ ਚੁਣੋ:
A) ਆਹੂ ਲਾਹੁਣੇ B) ਆਹੂ ਚੱਖਣੇ C) ਆਹੂ ਦੇਖਣੇ D) ਆਹੂ ਮਾਰਨੇ
15. ਖਾਣੇ ਛੋਲੇ _____ ਸਹੀ ਸ਼ਬਦ ਚੁਣ ਕੇ ਅਖਾਣ ਪੂਰਾ ਕਰੋ:
A) ਡਕਾਰ ਮੂੰਗਫਲੀ ਦੇ B) ਡਕਾਰ ਰੋਟੀ ਦੇ C) ਡਕਾਰ ਪਾਣੀ ਦੇ D) ਡਕਾਰ ਬਦਾਮਾਂ ਦੇ

Directions (Q 16 – 17) : Mark the word opposite in meaning to the given word.

16. Parsimonious
A) generous B) angry C) happy D) crude
17. Ameliorate
A) hasten B) expedite C) worsen D) protect

Directions (Q 18 – 19) : Mark the correct synonym to the given word out of four options:

18. Tepid
A) keen B) enthusiastic C) wasteful D) lukewarm
19. Sporadic
A) irregular B) serious C) regular D) continual

Directions (Q 20 – 21) : Mark the option which best replaces the underlined part of the sentences.

20. When the weather was cold, I wear monkey cap.
A) When the weather has been cold, I wore monkey cap.
B) When weather is cold, I wear monkey cap.
C) While the weather is cold, I wear monkey cap.
D) When weather were cold, I wear monkey cap.
21. Ramesh laid in the shade of a tree before he could walk further.
A) Ramesh has laid in the shade of a tree before he could walk further.
B) Ramesh lay in the shade of a tree before he could walk further.
C) Ramesh lied in the shade of a tree before he could walk further.
D) Ramesh layed in the shade of a tree before he could walk further.

Directions (Q 22 – 23) : Each question has two blanks, each blank indicating that something has been omitted. Mark the word for each blank which best fits the meaning of the sentence as a whole.

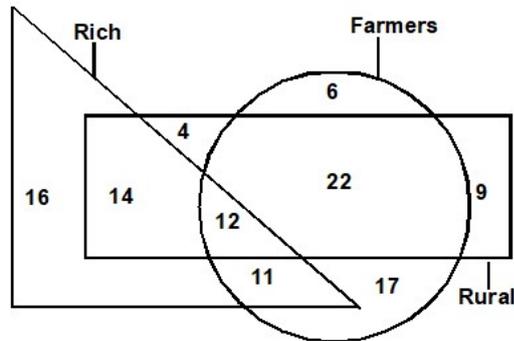
22. Despite being _____ in minerals, this state remains one _____ the poorest in the country.
A) rich, of B) dearth, in C) abundant, as D) despondent, for
23. The country 's education system still _____ very old-fashioned and is in _____ need of a revamp.
A) languishes, fastidious B) stays, firm C) is, quickly D) remains, urgent

Directions (Q 24 – 25) : Mark the correct form of the sentence in the indirect speech.

24. He said to me, "what are you doing."
A) He told me what are you doing. B) He asked me what I was doing.
C) He asked me what you were doing. D) He told me about what he was doing.
25. He said, "Alas! I am undone."
A) He informed that I was ruined. B) He cried that I was undone.
C) He exclaimed sadly that he was undone. D) He exclaimed that you have been undone.
26. When is Mole Day celebrated?
A) October 13 B) November 13 C) October 23 D) November 23
27. How was University of Roorkee known at the time of India's independence?
A) Elphinstone College of Civil Engineering
B) Fergusson College of Civil Engineering
C) Ripon College of Civil Engineering
D) Thomason College of Civil Engineering
28. How India is ranked in the list of countries with most number of World Heritage sites?
A) 6th B) 7th C) 8th D) 9th
29. Which one of the following statement(s) is(are) true?
(i) Pechora is Surface to Air missile, (ii) OSA-AK is Air to Surface missile
A) Only (i) is true B) Only (ii) is true
C) Both (i) and (ii) are true D) Neither (i) nor (ii) are true
30. In which field has Padam Awardee Onkar Singh Pahwa made his mark?
A) Art B) Literature and Education C) Medicine D) Trade and Industry
31. Who had inaugurated the old Parliament building of India?
A) Lord Curzon B) Lord Irwin C) Lord Mountbatten D) Lord Willingdon
32. Which of the following statement is true?
(i) Part IX deals with Scheduled and Tribal Areas
(ii) Part XI deals with Relation between Union & States
A) Only (i) B) Only (ii) C) Both (i) and (ii) D) Neither (i) nor (ii)

33. In cement production, clay or shale serves as a key source of:
 A) silica, alumina, and iron oxide
 B) calcium oxide, silica and alumina
 C) alumina, calcium oxide and iron oxide
 D) silica, alumina, and calcium oxide
34. Where in China, India has Consulates?
 A) Beijing and Tianjin
 B) Tianjin and Shanghai
 C) Shanghai and Guangzhou
 D) Guangzhou and Tianjin
35. Which of the following is the longest National Highway?
 A) NH 11
 B) NH 22
 C) NH 33
 D) NH 44
36. In the question, two pairs of words are given. The words in each of these pairs are associated with each other following some rule. On the basis of the same rule, you have to select one word from the alternatives which could replace sign (?)
 Dog : Bitch ; Sheep : Ewe ; Pig:?
 A) Porpoise
 B) Porcupine
 C) Swine
 D) Hound
37. In a certain code 'SENSITIVE' is written as 'QHLVGWGYC'. How is 'MICROSOFT' written in that code?
 A) KGAPMQMDT
 B) QKETQUQHV
 C) KLAUMVMIR
 D) LKBTNUNHS
38. In a certain code, 'pick and choose' is written as 'ko ho po' and 'pick up and come' is written as 'to no ko po'. How is 'pick' written in that code ?
 A) Ko
 B) po
 C) Either ko or po
 D) cannot be determined
39. In the following question, a number series is given. After the series, a number is given followed by (A), (B), (C), (D) and (E). You have to complete the series starting with the number on the pattern of the sequence of the given series. Then, answer the given questions:
 4, 14, 42, 147, 588, 2058, 10290,
 8, (A), (B), (C), (D), (E)
 Which number will come in place of (C)?
 A) 28
 B) 1176
 C) 294
 D) 216
40. Jatin's mother is Ena. Pratap is Bani's father. Sukrit is the son of Garv. Suyog's only sister is married to Garv. Suyog's is Anshum's son. Ena's husband is the only son of Pratap . Anshum is the wife of Pratap. Bani is the mother of Sukrit . How is Pratap related to Jatin?
 A) Paternal uncle
 B) Maternal grandfather
 C) Father
 D) Paternal grandfather
41. In a row of 28 students, Jamuna was 12th from the extreme left end and Ganga was 19th from the extreme right end. If Saraswati was seated exactly between them, then what was Saraswati's position from the right end ? Assume that the students were seated facing North.
 A) 17th
 B) 16th
 C) 20th
 D) 18th
42. Six people are sitting in two parallel rows with 3 people each in such a way that there is equal distance between adjacent persons. S, T and U are seated in the same row facing South. X, Y and Z are seated in the same row facing North. U sits at the extreme right end of their row and is exactly opposite of X. T is the immediate neighbour of U and sits exactly opposite of Z. Who sits at the extreme right end of the row facing North ?
 A) Z
 B) X
 C) U
 D) Y
43. By interchanging the given two signs and numbers which of the following equation will be correct?
 + and -, 7 and 6
 A) $4 \times 7 + 6 - 3 \div 1 = 20$
 B) $8 \times 7 + 5 \div 1 - 6 = 17$
 C) $7 - 6 \times 3 + 4 \div 1 = 8$
 D) $7 \times 2 - 6 + 4 \div 2 = 13$

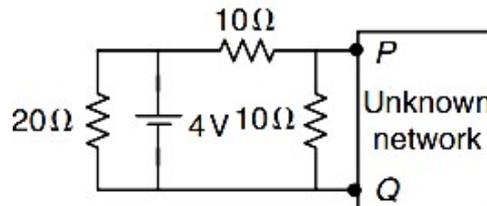
44. Nirav's house is 40 mt. South of Akash's house. Daksh's house is to the East of Akash's house in a straight line at a distance of X mt. Prakash's house is to the West of Akash's house in a straight line at a distance of Y mt. if the shortest distance between Prakash's house and Nirav's house is 50 mt. and the shortest distance between Daksh's house and Nirav's house is also 50 mt., then what is the distance between Prakash's house and Daksh's house?
 A) 60 mt. B) 30 mt. C) 80 mt. D) 40 mt.
45. In the given diagram, the circle stands for 'farmers', the rectangle stands for 'rural' and the triangle stands for 'rich'. The numbers given in the different segments represent the number of persons of that category. How many rural people are either farmers or rich but not both?



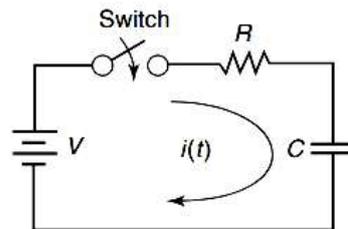
- A) 28 B) 36 C) 25 D) 47
46. Documents converted to _____ can be published to the Web.
 A) SMTP B) HTML C) HTTP D) DHCP
47. With regard to MS-WORD, to find a word to replace "happiness," use the:
 A) Spelling checker. B) Dictionary. C) Autocorrect feature. D) Thesaurus.
48. A realistic term that captures the idea that the information that comes out of a computer system is only as good, accurate, and valid as the data that goes into it is known as:
 A) WYSIWYG. B) GIGI. C) GIGO. D) Virtual reality.
49. The term _____ generally means using some combination of text, graphics, animation, video, music, voice, and sound effects to communicate.
 A) MIDI B) Hyperlinking C) WYSIWYG D) Multimedia
50. In MS-EXCEL, the formulae used to calculate the sum of values from the cell D1 to D20 is:
 A) =sum(D1-D20) B) =sum(D1,D20) C) =sum(D1:D20) D) =sum(D1+D20)
51. _____ are used for manufacturing CPU chips used in a computer and the CPU chip is made out of _____.
 A) Buses; Carbon B) Control Units; Copper
 C) Semiconductors; Silica D) Optical Fiber Cables; Silver
52. For each instruction of a program in the memory, the CPU goes through a
 A) decode - fetch - execute sequence. B) execute - store - decode sequence.
 C) fetch - decode - execute sequence. D) fetch - execute - decode sequence.
53. Which of the following is responsible for the management and coordination of activities and the sharing of the resources of the computer?
 A) Application Software B) Motherboard C) Operating System D) RAM

54. What does TCP/IP stand for?
 A) Transmission Control Protocol/ Internet Protocol
 B) Transport Capture Protocol/ Inside Packet
 C) Transmission Control Protocol/ Internet Packet
 D) Telecommunications Connection Protocol/ Internet Partitions
55. In the context of e-mail, what is 'spam'?
 A) The act of overloading an e-mail server by using denial-of-service attacks
 B) E-mail messages that are infected with viruses
 C) A large quantity of messages that do not reach the recipient
 D) Unsolicited advertising sent to a large number of recipients
56. Three equal impedances are first connected in delta across a 3- ϕ balanced supply. If the same impedances are connected in star across the same supply.
 A) phase currents will be one-third
 B) line currents will be one-third
 C) power consumed will be one-third
 D) Line current will be three times.
57. Time constant of a capacitive circuit increases with the
 A) increase of capacitance and decrease of resistance.
 B) increase of capacitance and increase of resistance.
 C) decrease of capacitance and decrease of resistance.
 D) decrease of capacitance and increase of resistance.
58. If two waves are expressed as $e_1 = E_{max1} \sin(\omega t + \alpha_1)$ and $e_2 = E_{max2} \sin(\omega t + \alpha_2)$, then
 A) e_1 is leading e_2 by $\angle (\alpha_2 - \alpha_1)$
 B) e_2 is leading e_1 by $\angle (\alpha_2 - \alpha_1)$
 C) e_2 is leading e_1 by $\angle (\alpha_1 - \alpha_2)$
 D) e_1 is in phase with e_2 .
59. Three identical impedances are connected in delta to a 3-phase supply of 400 V. The line-current is 34.65A and the total power taken is 14.4 kW. The resistance of the load in each phase (in ohm) is
 A) 20
 B) 16
 C) 12
 D) 10
60. A three phase transformer has the rating of 20MVA, 220 kV (star connection) – 33 kV (delta connection) with leakage reactance of 12%. The transformer reactance (in ohms) referred to each phase of the low voltage delta connected side is
 A) 6.5
 B) 19.6
 C) 24.3
 D) 3.5
61. A $4\frac{1}{2}$ digit DMM has the error specification as: 0.2 % of reading + 10 counts. If a dc voltage 100 V is read on its 200V full scale, the maximum error that can be expected in the reading is
 A) $\pm 0.1\%$
 B) $\pm 0.2\%$
 C) $\pm 0.3\%$
 D) $\pm 0.4\%$
62. The coil span of a short pitched coil is
 A) Less than radian mechanical
 B) Radian mechanical
 C) Less than radian electrical
 D) Radian electrical
63. One wattmeter method can be used to measure power in a three phase circuit when the load is
 A) Balanced
 B) Balanced and star connected
 C) Balanced and star connected with the neutral accessible
 D) Balanced and delta connected
64. How should the current in a magnetic circuit be changed to produce the same flux, if the reluctance is halved?
 A) Doubled
 B) no change
 C) Halved
 D) One-fourth

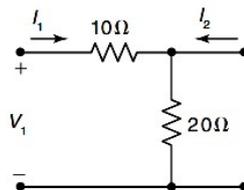
65. An ac source of voltage E_s and an internal impedance $Z_S = (R_S + jX_S)$ is connected to a load of impedance $Z_L = (R_L + jX_L)$. Consider the following conditions in this regard:
1. $X_L = X_S$, if only X_L is varied
 2. $X_L = -X_S$, if only X_S is varied
 3. $R_L = \sqrt{R_S^2 + (X_S + X_L)^2}$, if only R_L is varied
 4. $|Z_L| = |Z_S|$, if the magnitude of Z_L is varied, keeping the phase angle fixed
- Among these conditions, those which are to be satisfied for maximum power transfer from the source to the load would include.
- A) 2 and 3 B) 1 and 3 C) 1, 2 and 4 D) 2, 3 and 4
66. In Fig. Shown below find the Thevenin's equivalent pair (voltage, impedance), as seen at the terminals P-Q,



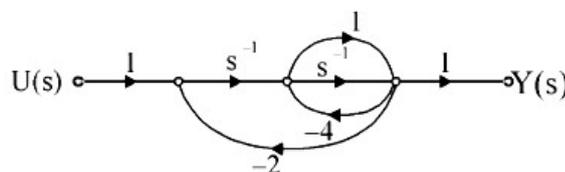
- A) (2 V, 5 Ω) B) (2 V, 7.5 Ω) C) (4 V, 5 Ω) D) (4 V, 7.5 Ω)
67. The transient response of the initially relaxed network shown in Fig. shown below is



- A) $i(t) = \frac{V}{R} (e^{-t/RC})$ B) $i(t) = \frac{V}{R} (e^{t/RC})$
 C) $i(t) = \frac{V}{R} (1 - e^{-t/RC})$ D) $i(t) = \frac{V}{R} (1 + e^{-t/RC})$
68. The h-parameters of the circuit shown in Fig. given below are

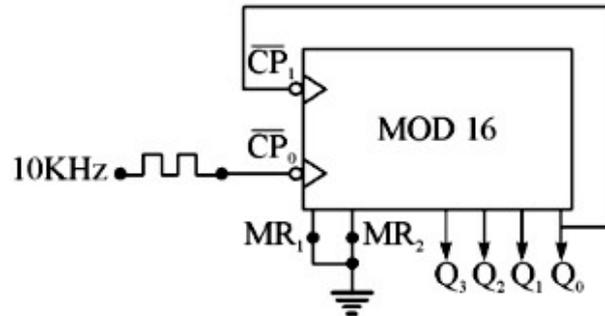


- A) $\begin{bmatrix} 0.1 & 0.1 \\ -0.1 & 0.3 \end{bmatrix}$ B) $\begin{bmatrix} 10 & -1 \\ 1 & 0.05 \end{bmatrix}$ C) $\begin{bmatrix} 30 & 20 \\ 20 & 20 \end{bmatrix}$ D) $\begin{bmatrix} 10 & 1 \\ -1 & 0.05 \end{bmatrix}$
69. The number of roots of the equation $2S^4 + S^3 + 2S^2 + 5S + 7 = 0$ that lie in the right half of s-plane is:
- A) 2 B) 3 C) 1 D) 0
70. The signal flow graph for a system is given below. The transfer function $\frac{Y(s)}{U(s)}$ for this system is

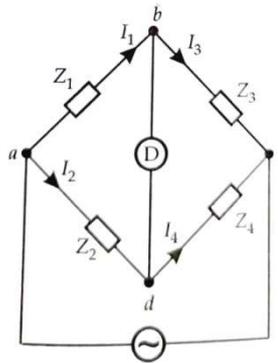


- A) $\frac{S+1}{5S^2+6S+2}$ B) $\frac{S+1}{S^2+6S+2}$ C) $\frac{S+1}{S^2+4S+2}$ D) $\frac{S+1}{S^2+S+2}$

71. The double integration of a unit step function will result
 A) Unit step function B) Ramp function--- C) Impulse D) parabola
72. A system is having a transfer function of $\frac{1}{(s+a)}$. What will be its impulse response?
 A) t B) e^{-at} C) t^2 D) e^{at}
73. The characteristic equation of closed loop control system is given as $S^2 + 4S + 16 = 0$. The natural frequency in radian/sec of the system is
 A) 2 B) $2\sqrt{3}$ C) 4 D) $2\sqrt{2}$
74. The decimal equivalent of hexadecimal number of '2ADF' is
 A) 17670 B) 17607 C) 17067 D) 10975
75. For a given MOD-16 counter with a 10kHz clock input determine the frequency at Q_3 .



- A) 10kHz B) 0 Hz C) 625 Hz D) 2.5 kHz
76. For the bridge shown in figure below: $Z_1 = 200 \angle 30^\circ \Omega$, $Z_2 = 150 \angle 0^\circ \Omega$, $Z_3 = 250 \angle -40^\circ \Omega$. In order that the bridge be balanced Z_4 should be:



- A) $187.5 \angle -70^\circ \Omega$ B) $187.5 \angle -10^\circ \Omega$ C) $333.3 \angle 10^\circ \Omega$ D) $120 \angle 70^\circ \Omega$
77. A strip chart recorder is
 A) An active transducer B) An inverse transducer
 C) An output transducer D) Both inverse and output transducer
78. A moving iron instrument can be used for current and voltage measurements
 A) In a.c. circuits only
 B) In d.c. circuits only
 C) In both a.c. and d.c. circuits for any value of frequency (in case of ac circuits)
 D) In both a.c. and d.c. circuits for frequencies upto about 125Hz (in case of a.c. circuits)
79. The burden of a current transformer is expressed in terms of :
 A) Secondary winding current
 B) VA rating of transformer
 C) Voltage, current, power factor of secondary winding circuit
 D) Primary winding current

80. When measuring power with an electro-dynamometer wattmeter in a circuit where the load current is large:
- A) The current coil should be connected on the load side.
 - B) The pressure coil should be connected on the load side.
 - C) The pressure coil should be connected on the supply side.
 - D) It is immaterial whether the pressure coil or current coil is connected on the load side.

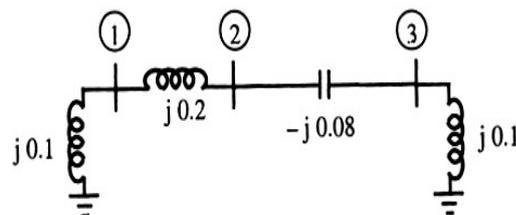
81. Relationship for the electric field intensity is
- A) $E = \frac{Q}{4\pi r}$
 - B) $E = \frac{Q}{4\pi r^2}$
 - C) $E = \frac{Q}{4\pi \epsilon r}$
 - D) $E = \frac{Q}{4\pi \epsilon r^2}$

82. The number of different Boolean functions of 4 variables is
- A) 2^{16}
 - B) 16^2
 - C) 4^2
 - D) 16

83. A J-K flip flop can be converted to D flip flop by making
- A) $J = K$
 - B) $J = \bar{K}$
 - C) $J = K = 1$
 - D) $J = K = 0$

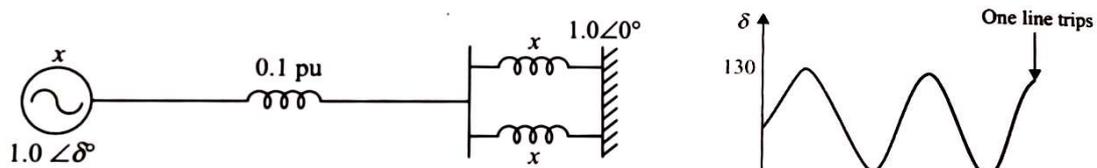
84. Which of the following function of a Megger?
- A) Measure power
 - B) Measure energy
 - C) Measure insulation resistance
 - D) Measure conductor resistance

85. A three bus network is as shown in figure below indicating the p.u. impedances of each element. The bus admittance matrix, Y_{bus} of the network is



- A) $\begin{bmatrix} 0.3 & -0.2 & 0 \\ -0.2 & 0.12 & 0.08 \\ 0 & 0.08 & 0.02 \end{bmatrix}$
- B) $\begin{bmatrix} -15 & 5 & 0 \\ 5 & 7.5 & -12.5 \\ 0 & -12.5 & 2.5 \end{bmatrix}$
- C) $\begin{bmatrix} 0.1 & 0.2 & 0 \\ 0.2 & 0.12 & -0.08 \\ 0 & -0.08 & 0.02 \end{bmatrix}$
- D) $\begin{bmatrix} -10 & 5 & 0 \\ 5 & 7.5 & 12.5 \\ 0 & 12.5 & -10 \end{bmatrix}$

86. Consider a synchronous generator connected to an infinite bus by two identical parallel transmission lines. The transient reactance X of the generator is 0.1 pu and the mechanical power input to it is constant at 1.0 pu. Due to some previous disturbance, the rotor angle (δ) is undergoing an undamped oscillation, with the maximum value of $\delta(t)$ equal to 130° as shown in figure below. The maximum value of the per unit line reactance X , such that the system does not lose synchronism is



- A) 0.67
- B) 0.87
- C) 0.47
- D) 0.73

87. The insulation resistance of a cable of length of 10 km is $1\text{M}\Omega$. Its resistance for 50 km length will be
 A) $1\text{M}\Omega$ B) $5\text{M}\Omega$ C) $0.2\text{M}\Omega$ D) $1\text{M}\Omega$
88. Which of the following types of plate is used as an earthing electrode?
 A) Aluminium B) Galvanized iron C) Steel D) brass
89. Retentivity and coercive force are used in connection with
 A) Hysteresis loop B) Loop current C) Current cycle D) Voltage cycle
90. A half controlled single phase bridge rectifier is supplying an RL load. It is operated at a firing angle α and the load current is continuous. The fraction of cycle that the freewheeling diode conduct is
 A) $\frac{1}{2}$ B) $1 - \frac{\alpha}{\pi}$ C) $\frac{\alpha}{2\pi}$ D) $\frac{\alpha}{\pi}$
91. The ripple frequency of a three phase fully controlled full wave rectifier is _____ times that of the supply frequency.
 A) 6 B) 9 C) 3 D) 12
92. During the regenerative braking operation of a chopper based dc drive, energy transfer takes place _____ .
 A) From the load at high voltage to the source at low voltage
 B) From the load at low voltage to the source at high voltage
 C) From the source at high voltage to the load at low voltage
 D) From the source at low voltage to the high at high voltage
93. When a synchronous motor is under-excited it
 A) Supplies capacitive reactive power to the system
 B) Takes inductive reactive power from the system
 C) Takes capacitive reactive power from the system
 D) Does not take any reactive power
94. ACSR conduct having 7 steel strands surrounded by 25 aluminium conductors will be specified as
 A) 7/25 B) 7/32 C) 25/7 D) 25/32
95. In Swinburne's method of testing dc machines, the shunt machine is run as a
 A) motor at no load at rated speed and rated voltage
 B) generator at no load at near rated speed and rated voltage
 C) generator at full load at rated speed and rated voltage
 D) generator at no load at rated speed and rated terminal voltage
96. A 4-pole, 3-phase, double layer winding is housed in a 36-slot stator for an AC machine with 60° phase spread. Coil span is 8 slot pitches. Number of slots in which top and bottom coil-sides belong to different phases is
 A) 24 B) 18 C) 12 D) 15
97. A 3 phase induction motor is driving a constant torque load of 1 p.u. at 5% slip. It has a maximum torque of 2 pu at 10% slip. Torque speed variation in stable zone is assumed to be linear. For the stable operation of the motor, the minimum p.u. supply voltage is approximately
 A) 0.25 B) 0.50 C) 0.707 D) 0.80

98. No-load test on a 3-phase IM was conducted at different supply voltages and a plot of input power versus voltage was drawn. This curve was extrapolated to intersect the y-axis. This intersection point yields
- A) core loss
B) stator copper loss
C) stray load loss
D) friction and windage loss.
99. For a 400kV line, the number of discs in an insulator string is around
- A) 31
B) 40
C) 15
D) 37
100. An alternator has a phase sequence of RYB for its phase voltages. In case the field current is reversed, the phase sequence will be
- A) RBY
B) RYB
C) YRB
D) BRY

Answer key (06) ASSTT. ENGG. (ELECTRICAL)

Q.No.	Ans	Q.No.	Ans	Q.No.	Ans	Q.No.	Ans
1	C	26	C	51	C	76	A
2	C	27	D	52	C	77	D
3	D	28	A	53	C	78	D
4	B	29	A	54	A	79	B
5	C	30	D	55	D	80	B
6	B	31	B	56	C	81	D
7	C	32	B	57	B	82	A
8	D	33	A	58	B	83	B
9	C	34	C	59	C	84	C
10	B	35	D	60	B	85	B
11	A	36	C	61	C	86	A
12	C	37	C	62	C	87	C
13	C	38	C	63	C	88	B
14	A	39	C	64	C	89	A
15	D	40	D	65	D	90	D
16	A	41	D	66	C	91	A
17	C	42	D	67	A	92	B
18	D	43	A	68	D	93	B
19	A	44	A	69	A	94	C
20	B	45	B	70	A	95	D
21	B	46	B	71	B	96	C
22	A	47	D	72	B	97	C
23	D	48	C	73	C	98	D
24	B	49	D	74	D	99	D
25	C	50	C	75	C	100	B