Name of Applicant ....   Answer Sheet No. ....

Application No. : SVSU/2020/Estt/NT/ ....   Signature of Applicant : ....

Date of Examination: **26 / 12 / 2021**   Signature of the Invigilator(s)

1.   ....

Time of Examination : ....   2.   ....

Duration : 2 Hours]   **[Maximum Marks : 100**

IMPORTANT INSTRUCTIONS

(i)   The question paper is in the form of Test-Booklet containing **100 (Hundred)** questions. All questions are compulsory. Each question carries four answers marked (A), (B), (C) and (D), out of which only one is correct.

(ii)   On receipt of the Test-Booklet (Question Paper), the candidate should immediately check it and ensure that it contains all the pages, i.e., **100** questions (70 in Part-A + 30 in Part–B). Discrepancy, if any, should be reported by the candidate to the invigilator immediately after receiving the Test-Booklet.

(iii)   A separate Answer-Sheet is provided with the Test-Booklet/Question Paper. On this sheet there are **100** rows (70 in Part-A + 30 in Part–B) containing four circles each. One row pertains to one question.

(iv)   The candidate should write his/her Application number at the places provided on the cover page of the Test-Booklet/Question Paper and on the Answer-Sheet and NOWHERE ELSE.

(v)   No second Test-Booklet/Question Paper and Answer-Sheet will be given to a candidate. The candidates are advised to be careful in handling it and writing the answer on the Answer-Sheet.

(vi)   For every correct answer of the question **One (1) mark will be awarded.** For every unattempted question, Zero (0) mark shall be awarded. **There is no Negative Marking.**

(vii)   Marking shall be done only on the basis of answers responded on the Answer-Sheet.

(viii) To mark the answer on the Answer-Sheet, candidate should **darken** the appropriate circle in the row of each question with Blue or Black pen.

(ix)   For each question only **one** circle should be **darkened** as a mark of the answer adopted by the candidate. If more than one circle for the question are found darkened or with one black circle any other circle carries any mark, the question will be treated as cancelled.

(x)   The candidates should not remove any paper from the Test-Booklet/Question Paper. Attempting to remove any paper shall be liable to be punished for use of unfair means.

(xi)   Rough work may be done on the blank space provided in the Test-Booklet/Question Paper only.

(xii)   *Mobile phones (even in Switch-off mode) and such other communication/programmable devices are not allowed inside the examination hall.*

(xiii) No candidate shall be permitted to leave the examination hall before the expiry of the time.

DO NOT OPEN THIS QUESTION BOOKLET UNTIL ASKED TO DO SO.

PART–A

1. Calculate the electrical energy in unit consumed by 500 W lamp for 5 hours.

   (A) 0.5 unit

   (B) 1.0 unit

   (C) 1.5 unit

   (D) 2.5 unit

2. Which law states that in closed electric circuit, the applied voltage is equal to the sum of the voltage drops?

   (A) Ohm's law

   (B) Laws of resistance

   (C) Kirchhoff's first law

   (D) Kirchhoff's second law

3. What is the change of resistance value of the conductor as its diameter is doubled?

   (A) Increases to two times

   (B) Decreases to four times

   (C) Decrease to half of the value

   (D) No change in value of resistance

4. Which material is having negative temperature co-efficient property?

   (A) Mica

   (B) Eureka

   (C) Copper

   (D) Manganin

5. What electrical quantities are related in Ohm's law?

   (A) Current, resistance and power

   (B) Current, voltage and resistivity

   (C) Current, voltage and resistance

   (D) Voltage, resistance and current density

6. What is the effect of the parallel circuit with one branch opened?

   (A) Current will remain same

   (B) Whole circuit will not function

   (C) No current will flow in that branch

   (D) Voltage drop increase in the opened branch

7. What is the unit of resistivity?

   (A) ohm / cm

   (B) ohm / cm^2

   (C) ohm – metre

   (D) ohm / metre

8. How the capacity of batteries is specified?

   (A) Volt

   (B) Watt

   (C) Volt Ampere

   (D) Ampere hour

9. What is the unit of electric charge?

   (A) Volt

   (B) Watt

   (C) Ampere

   (D) Coulomb

10. Which effect causes by passing electric current in liquids?

    (A) Heating

    (B) Lighting

    (C) Magnetic

    (D) Chemical

11. Copper as conductor for cables is used as

    (A) Annealed

    (B) Hardened and tempered

    (C) Hard drawn

    (D) Alloy with chromium

12. Cables generally used beyond 66 KV are

    (A) Oil field

    (B) S.L. Type

    (C) Belted

    (D) Armoured

13. The temperature range for soldering process is ....

    (A) 40ºC to 100ºC

    (B) 180ºC to 250ºC

    (C) 300ºC to 500ºC

    (D) 600ºC to 900ºC

14. The purpose of using flux in soldering is to ....

    (A) Increase fluidity of solder metal

    (B) Feel up gaps left in a bad joint

    (C) Carbon steel

    (D) Prevent oxides forming

15. A term used to express the amount of electrical energy stored in electrostatic field.

    (A) Joules

    (B) Coulombs

    (C) Watts

    (D) Electron-volt

16. If two resistances of 9 Ω and 6 Ω are connected in parallel, the total resistance is

    (A) 54 Ω

    (B) 0.3 Ω

    (C) 15 Ω

    (D) 3.6 Ω

17. A capacitor is used to

    (A) Block dc current

    (B) Pass dc current

    (C) Open voltage source

    (D) Short the voltage source

18. Nodal analysis is based on

    (A) KCL

    (B) KVL

    (C) Both

    (D) Law of conservation of energy

19. Kirchhoff's laws are valid for

   (A) Linear circuits only

   (B) Passive time invariant circuits

   (C) Nonlinear circuits only

   (D) Both the linear and nonlinear circuits only

20. Five 2 V cells are connected in parallel. The output voltage is.

   (A) 1 V

   (B) 1.5 V

   (C) 1.75 V

   (D) 2 V

21. Wheatstone bridge is used to measure resistance in the range of _____

   (A) 1 Ω to a few megaohms

   (B) 10 kΩ to a few megaohms

   (C) 100 MΩ to a few gegaohms

   (D) 100 Ω to a few teraohms

22. Telephone companies make use of the Wheatstone bridge for _____

   (A) measuring the telephone resistance

   (B) computing the line strength

   (C) maintaining dialtone

   (D) locating the cable faults

23. The speed at which rotating magnetic field revolves is called?

   (A) Induction speed

   (B) Synchronous speed

   (C) Relative speed

   (D) Rotating speed

24. No-load speed of which of the following motor is highest?

   (A) Differentially compound motor

   (B) Cumulative compound motor

   (C) Series Motor

   (D) Shunt Motor

25. Which power is mentioned on a name plate of a motor?

   (A) Gross power

   (B) Power drawn in kVA

   (C) Power drawn in kW

   (D) Output power available at the shaft

26. Which of the following quantity will decrease if supply voltage is increased?

   (A) Starting torque

   (B) Operating speed

   (C) Full-load current

   (D) Cannot be determined

27. In India, direct-on-line starter can be used for 3-phase squirrel cage induction motor up to the rating of

    (A) 5 HP

    (B) 10 HP

    (C) 15 HP

    (D) 25 HP

28. If an induction motor is initially connected in delta and then reconnected in star then the current drawn will become

    (A) Thrice of the current drawn when connected in delta

    (B) Twice of the current drawn when connected in delta

    (C) One third of the current drawn when connected in delta

    (D) Half of the current drawn when connected in delta

29. While using stator resistance starter with 3 phase induction motor, the resistances of the starter are kept at

    (A) Maximum

    (B) Minimum

    (C) Half of the maximum value

    (D) None of these

30. An autotransformer starter is suitable for

    (A) Star connected induction motor

    (B) Delta connected induction motor

    (C) Both (A) and (B)

    (D) None of these

31. The cheapest starter for induction motor is

    (A) Stator resistance starter

    (B) Autotransformer starter

    (C) Star-delta starter

    (D) Rotor resistance starter

32. The NO contact and NC contact of D.O.L. starter is normally

    (A) Open, closed

    (B) Closed, open

    (C) Open, open

    (D) Closed, closed

33. In which of the following applications, wound rotor type of induction motor is used?

    (A) Where the driven load requires speed control

    (B) Where high starting torque is required

    (C) When external resistance is to be inserted

    (D) Any of the mentioned

34. The method which can be used for the speed control of induction motor from stator side is

    (A) V / f control

    (B) Controlling number of stator poles to control Ns

    (C) Adding rheostats in stator circuit

    (D) All of these

35. With increase of load, the speed of induction motor operating in the stable region

    (A) Increases

    (B) Decreases

    (C) Remains constant

    (D) Increases and then becomes constant

36. In the following motor, external resistance can be added to start the motor

    (A) Slip ring induction motor

    (B) Squirrel cage induction motor

    (C) Salient pole synchronous motor

    (D) Wound rotor synchronous motor

37. The usual lamination thickness selected to minimize the eddy current loss in rotor is _____

    (A) 0.1 mm to 0.2 mm

    (B) 0.3 mm to 0.4 mm

    (C) 0.4 mm to 0.5 mm

    (D) 0.9 mm to 0.10 mm

38. In an induction motor, which of the following is correct?

    (A) Stator core loss < rotor core loss

    (B) Stator core loss = rotor core loss

    (C) Stator core loss > rotor core loss

    (D) Any of the mentioned

39. In a split-phase motor, the running winding should have

    (A) High resistance and low inductance

    (B) High resistance and high inductance

    (C) Low resistance and high inductance

    (D) Low resistance and low inductance

40. A centrifugal switch is used to disconnect starting winding when the motor has

    (A) Picked up 10% speed

    (B) Picked up 20% speed

    (C) Picked up 5-10% speed

    (D) Picked up 50-75% speed

41. What is the maximum number of lighting points that can be connected in a circuit?

    (A) 5

    (B) 10

    (C) 8

    (D) 12

42. What is the maximum load that can be connected in a circuit connecting only lighting points?

    (A) 500 watts

    (B) 750 watts

    (C) 800 watts

    (D) 1000 watts

43. Overload relays are of _____ type.
    (A) Solid state
    (B) Thermal
    (C) Electromagnetic
    (D) All of the above

44. The earthing wire should have
    (A) High resistance
    (B) Medium resistance
    (C) Negligible resistance
    (D) Any of the above

45. What should be the value of earthing resistance for large power stations?
    (A) 12 Ω
    (B) 0.5 Ω
    (C) 2 Ω
    (D) 50 Ω

46. The materials used in plate earthing are
    (A) Charcoal
    (B) Salt
    (C) GI wire
    (D) All of the above

47. How many earth connections are required for the motor frame as per the IE rule 61?
    (A) One
    (B) Two separate and distinct
    (C) Three separate and distinct
    (D) All of these

48. Which method is used for the lighting calculations?
    (A) Watts per square meter method
    (B) Lumen or light flux method
    (C) Point to point method
    (D) All of these

49. Which among these tests are to be conducted on wiring installations?
    (A) Testing of polarity of non linked single pole switches
    (B) Testing of earth continuity path
    (C) Testing of earth resistance
    (D) All of these

50. Which IE rule is applicable to service mains?
    (A) Rule 30
    (B) Rule 33
    (C) Rule 77
    (D) All of these

51. As the transmission voltage increases the volume of the conductor
    (A) Increases
    (B) Decreases
    (C) Will not change
    (D) Will increase proportionately

52. Which of the following material is not used for overhead line insulators?
    (A) Porcelain
    (B) Glass
    (C) PVC
    (D) Steatite

8

53. What is the most common cause of failure of overhead line insulators?

   (A) Flashover

   (B) Mechanical stress

   (C) Porosity of materials

   (D) Improper vitrification

54. Wooden poles for supporting transmission lines are used for voltages up to

   (A) 440 V

   (B) 11 kV

   (C) 22 kV

   (D) 66 kV.

55. For improving life, steel poles are galvanized. Galvanizing is the process of applying a layer of

   (A) paint

   (B) varnish

   (C) tar coal

   (D) zinc.

56. ACSR conductor implies

   (A) All conductors surface treated and realigned

   (B) Aluminum conductor steel reinforced

   (C) Anode current sinusoidally run

   (D) Anodized Core Smooth Run.

57. Corona loss can be reduced by using
   1. Solid conductor.
   2. Hollow conductor.
   3. Bundle conductor.

   (A) 1 only

   (B) 1 and 2 only.

   (C) 1, 2 and 3 only.

   (D) 2 and 3 only.

58. Which of the following method of protection is used to achieve earth fault operation?

   (A) Core balance method

   (B) Relay connected with neutral to ground

   (C) Frame leakage method

   (D) None of these

59. Minimum faults occur in which of the following power system equipment?

   (A) Transformer

   (B) Switch gear

   (C) CT, PT

   (D) Alternator

60. Lightining arrestor should be located

   (A) Away from the circuit breaker

   (B) Near the transformer

   (C) Away from the transformer

   (D) Near the circuit breaker

61. Air blast circuit breakers are preferred for

   (A) Short duty

   (B) Repeated duty

   (C) Intermittent duty

   (D) None of these

62. Protective relays are the devices that detect abnormal conditions in electrical circuits by measuring

    (A) Voltage

    (B) Current

    (C) Constantly the electrical quantities which differ during normal and abnormal conditions

    (D) None of the above

63. Which of the following relay is/are overload relays?

    (A) Thermal

    (B) Electromagnetic

    (C) Induction

    (D) All of the above

64. Relay used for feeder protection is

    (A) Under voltage relay

    (B) Translay relay

    (C) Thermal relay

    (D) Buchholz relay

65. Pole mounted sub stations are used for .... distribution

    (A) Primary

    (B) Secondary

    (C) Both (A) and (B)

    (D) None of the above

66. The advantage of neutral earthing is

    (A) Freedom from persistent arcing grounds

    (B) Over voltages due to lightning can be discharged to earth

    (C) Simplified design earth fault protection

    (D) All of the above

67. In a substation the following equipment is not installed

    (A) Exciters

    (B) Series capacitors

    (C) Shunt reactors

    (D) Voltage transformers

68. The over voltage surge in power systems may be caused by

    (A) Lightning

    (B) Resonance

    (C) Switching

    (D) All of the above

69. IDMT relays are used to protect the power transformers against

    (A) External short-circuit

    (B) Over loads

    (C) Internal short-circuits

    (D) Both (A) and (B)

70. The type of fire extinguisher to put out an electrical fire is

    (A) CLASS A

    (B) CLASS B

    (C) CLASS C

    (D) CLASS D

10

PART–B

71. When is Vijay Diwas observed every year?
    (A) 13 December
    (B) 14 December
    (C) 15 December
    (D) 16 December

72. Who among the following has been given the power by the Constitution of India to "Impose Reasonable Restrictions" on the fundamental rights?
    (A) President
    (B) Parliament
    (C) Supreme Court
    (D) Both Parliament & Supreme Court

73. The main reason for blueness of the sky is
    (A) Due to the presence of water vapor
    (B) Due to the absorption of blue light due to the air
    (C) Due to the scattering of sunlight by air molecules
    (D) None of the above

74. The Ministry of Labour & Employment has launched the DigiSaksham Programme, in partnership with which company to impart digital skill among youths?
    (A) Amazon India
    (B) Facebook India
    (C) Microsoft India
    (D) NITI Aayog

75. 'Clean India Programme' has been inaugurated from which state?
    (A) Bihar
    (B) West Bengal
    (C) Uttar Pradesh
    (D) Gujarat

76. In context of skill based/vocational education, NSQF competency level 8 is equivalent to …...........
    (A) Undergraduate (Hons) Degree
    (B) Masters (Postgraduate) Degree
    (C) Diploma
    (D) Advance Diploma

77. Every rational number is a …………….
    (A) Whole number
    (B) Natural number
    (C) Integer
    (D) Real number

78. If the simple interest for 2 years is Rs. 500/- at 10% rate of interest. Find the compound interest for the same time.
    (A) Rs. 525
    (B) Rs. 500
    (C) Rs. 200
    (D) Rs. 210

[P.T.O.

79. An article is bought for Rs. 600 and sold for Rs. 500, find the loss percent

    (A) 16.67

    (B) 15.34

    (C) 14.78

    (D) 13.23

80. A man goes to Mumbai from Pune at a speed of 4 km/hr and returns to Pune at speed of 6 km/hr. What is his average speed of the entire journey?

    (A) 4.8 km/hr

    (B) 5 km/hr

    (C) 4.2 km/hr

    (D) 5.6 km/hr

81. What will be the value of (74.6-38.9-5.7) / (26.4-18.9) ?

    (A) 3.5

    (B) 2.25

    (C) 2.0

    (D) 4.0

82. The average of five numbers is 7. If three new numbers would be added, then the new average comes out to be 8.5. What is the average of those three new numbers?

    (A) 10.5

    (B) 11

    (C) 9

    (D) 11.5

83. The case was put .... the judge and the judge decided it within an year.

    (A) at

    (B) from

    (C) before

    (D) of

84. Do you .... go to sleep early? Is it insomnia?

    (A) Ever

    (B) Sometime

    (C) Never

    (D) Always

85. She has not spoken to us .... we had the argument.

    (A) Since

    (B) While

    (C) So

    (D) As

86. Convert the sentence from Direct Speech to Indirect Speech.

    He said to her, Are you coming to the party?

    (A) He asked her whether she was coming to the party.

    (B) He told her if she was coming to the party.

    (C) He asked her if she will be coming to the party.

   (D) He asked her if she will be coming to the party.

87. Synonym of Intricate

(A) Non complex

(B) Simplistic

(C) Involved

(D) Plain

88. The fire .... the huts before the fire brigade came.

(A) had burnt

(B) will burn

(C) has burnt

(D) burns

89. If NOIDA is written as OPJEB, then what will be the code for DELHI?

(A) EFMAK

(B) EFAMK

(C) EFMIJ

(D) EFMIK

90. Which number is wrong in the series 2, 6, 15, 31, 56, 93?

(A) 6

(B) 31

(C) 56

(D) 93

91. Hypsiphobia : Height : : Hylophobia : ?

(A) Forests

(B) Animals

(C) Water

(D) All the above

92. Which of the following set of letters complete the letter series, when sequentially placed at the gaps?

bca _ b _ aabc _ a _ caa

(A) ccab

(B) bcbb

(C) acab

(D) cbab

93. Which of the following pairs of words are differently related?

(A) Kind : Cruel

(B) Slow : Sluggish

(C) Stale : Fresh

(D) Truth : Lie

94. Raman says "Anuj's mother is the only daughter of my mother." How is Anuj related to Raman?

(A) Brother

(B) Nephew

(C) Father

(D) None of the above

13

[P.T.O.

95. Find the number of triangles in the given figure.

(A) 22

(B) 24

(C) 26

(D) 28

96. Find the minimum number of straight lines required to make the given figure.
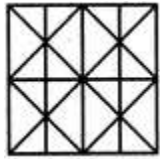
(A) 11

(B) 14

(C) 16

(D) 17

97. March is introduced by April as the son of the only brother of his father's wife. How is April related to March?

(A) Son

(B) Son-in-Law

(C) Uncle

(D) Cousin

98. From the given statements, choose the conclusions which logically follow:

Statements :

1. All chips are computers.

2. No computer is a mobile.

3. All mobiles are tablets.

Conclusions :

X : No tablet is a chip.

Y : Some tablets are chips.

Options :

(A) Only conclusion X follows

(B) Only conclusion Y follows

(C) Either conclusion X or Y follows

(D) Neither conclusion X nor Y follows

99. Aditya walked 15 m towards south and took a right turn and walked 3 m, he took a right turn again and walked 15 m before stopping. Which direction did he face?

(A) East

(B) West

(C) North

(D) South

100. If the marked price of 30 articles is equal to selling price of 40 articles, then find the % discount?

(A) 25%

(B) 33.33%

(C) 75%

(D) 20%

14

ROUGH WORK

ROUGH WORK

ANSWER KEY- Electrician

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