

# Online Examinations (Even Sem/Part-I/Part-II Examinations 2020 - 2021)

Course Name - --Control of Electrical Machine

Course Code - DEE604C

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Answer all the questions. Each question carry one mark.

9. 1. A node having only outgoing branches.

*Mark only one oval.*

- Input node
- Output node
- Incoming node
- Outgoing node

10. 2. Loop which do not possess any common node are said to be

*Mark only one oval.*

- Forward gain
- Touching loops
- Non touching loops
- Feedback gain

11. 3. A fully controlled converter uses

*Mark only one oval.*

- diodes only
- thyristors only
- none of the mentioned
- both diodes and thyristors

12. 4. In a single phase full wave rectifier, during blocking state the peak inverse voltage of diode is

*Mark only one oval.*

- $V_m$
- $2 V_m$
- $V_m / 2$
- $4 V_m$

13. 5. The contact resistance of a manually operated switch is

*Mark only one oval.*

- Zero
- Very high
- Very low
- None of the above

14. 6. A switch should have

*Mark only one oval.*

- High insulation resistance
- Low insulation resistance
- Insulation resistance equal to contact resistance
- None of the these

15. 7. The fuse rating is expressed in terms of

*Mark only one oval.*

- Current
- Voltage
- VAR
- KVA

16. 8. Protection by fuses is generally not used beyond

*Mark only one oval.*

- 20 A
- 50 A
- 100 A
- 200 A

17. 9. A fuse in a motor circuit provides protection against

*Mark only one oval.*

- Overload
- Short-circuit and overload
- Open circuit, short-circuit and overload
- none of these None of the above

18. 10. In HRC fuse the time between cut-off and final current zero is called the

*Mark only one oval.*

- Pre-arcing time
- Arcing time
- Total operating time
- None of the above

19. 11. By which of the following methods major portion of the heat generated in a HRC fuse is dissipated ?

*Mark only one oval.*

- Radiation
- Convection
- Conduction
- None of the above

20. 12. The fuse blows off by

*Mark only one oval.*

- Arcing
- Burning
- Melting
- no options

21. 13. The material best suited for manufacturing of fuse wire is

*Mark only one oval.*

- Silver
- Copper
- Aluminium
- Zinc



22. 14. fuse is normally a

*Mark only one oval.*

- Power limiting device
- Voltage limiting device
- Current limiting device
- Power factor correcting device

23. 15. A typical light switch in your home is

*Mark only one oval.*

- Push button
- Toggle
- Rotary
- Knief

24. 16. Relays can be designed to respond to changes in

*Mark only one oval.*

- Resistance, reactance or impedance
- Voltage and current
- Temperature
- All of the above

25. 17. Thermal overload relays are used to protect the motor against over current due to

*Mark only one oval.*

- Short-circuits
- Heavy loads
- Grounds.
- All options are correct

26. 18. MCB protects a circuit from

*Mark only one oval.*

- Short circuit
- Over Load only
- Both short circuit and overload
- None of these

27. 19. Which of the following fuse is very fast in operation?

*Mark only one oval.*

- KitKat fuse
- Semiconductor Fuse
- Cartridge fuse
- High rupturing capacity type

28. 20. Why starters are required in a DC motor?

*Mark only one oval.*

- Back emf of these motors is zero initially
- These motors are not self-starting
- These motors have high starting torque
- To restrict armature current as there is no back emf at starting

29. 21. What will happen if DC motor is used without starter?

*Mark only one oval.*

- Heavy sparking at brushes
- It'll start smoothly
- Will not start at all
- Depends on load

30. 22. The speed of a DC shunt motor can be increased by

*Mark only one oval.*

- Increasing the resistance in armature circuit
- Increasing the resistance in field circuit
- Reducing the resistance in the field circuit
- Reducing the resistance in the armature circuit

31. 23. Which braking is not possible in series motor?

*Mark only one oval.*

- dynamic
- plugging
- regenerative
- rheostat

32. 24. What type electric drive is used in cranes?

*Mark only one oval.*

- mutimotor
- group
- ndividual
- both 2 and 3

33. 25. Which speed control method preferred for constant torque drive?

*Mark only one oval.*

- field control
- armature voltage control
- mechanical loadin
- None

34. 26. A closed loop system is distinguished from open loop system by which of the following ?

*Mark only one oval.*

- Servomechanism
- Feedback
- Output pattern
- Input pattern

35. 27. The armature voltage control of D.C. motor provides

*Mark only one oval.*

- constant voltage drive
- constant current drive
- constant torque drive
- none

36. 28. For which types of D.C. motor, dynamic braking is generally used?

*Mark only one oval.*

- shunt motor
- series motor
- compound motor
- all the above

37. 29. Find the output voltage expression for a step down chopper with  $V_s$  as the input voltage and  $\alpha$  as the duty cycle

*Mark only one oval.*

- $V_o = V_s/\alpha$
- $V_o = V_s \times \alpha$
- $V_o = V_s^2/\alpha$
- $V_o = 2V_s/\alpha\pi$

38. 30. A step-up chopper has input voltage of 220 V and output voltage of 660 V. If the conducting time of the IGBT based chopper is 100  $\mu\text{s}$ , compute  $T_{\text{off}}$  width of the output voltage pulse.

*Mark only one oval.*

- 100  $\mu\text{s}$
- 150  $\mu\text{s}$
- 50  $\mu\text{s}$
- Insufficient data

39. 31. Regenerative method of braking is based on that

*Mark only one oval.*

- back emf is less than the applied voltage
- back emf is equal to the applied voltage
- back emf is more than the applied voltage
- no options are right

40. 32. In case the back e.m.f. and the speed of a D.C. motor are doubled, the torque developed by the motor will

*Mark only one oval.*

- remain unchanged
- Reduce to one-fourth value
- Increase four folds
- be doubled

41. 33. Which of the following motors is most suitable for signaling devices and many kinds of timers?

*Mark only one oval.*

- dc series
- dc shunt
- reluctance motor
- induction motor

42. 34. For a step-down chopper, when the duty cycle is increased the average value of the output voltage

*Mark only one oval.*

- increases
- decreases
- remains the same
- none of the mentioned

43. 35. The expression for a step-up/step-down chopper with  $\alpha$  as the duty cycle and  $V_s$  as the dc input voltage is

*Mark only one oval.*

- $V_s/1 - \alpha$
- $\alpha \times V_s$
- $V_s (\alpha/1-\alpha)$
- $V_s (\alpha/1+\alpha)$

44. 36. The acronym PLC stands for

*Mark only one oval.*

- Pressure Load Control
- Programmable Logic Controller
- Pneumatic Logic Capstan
- Pressure Loss Chamber

45. 37. Ladder logic programming consists primarily of:

*Mark only one oval.*

- Virtual relay contacts and coils
- Logic gate symbols with connecting lines
- Function blocks with connecting lines
- Hieroglyphics



46. 38 The difference between online and offline PLC programming is .

*Mark only one oval.*

- whether the PLC is running or stopped
- whether the programming PC has internet connectivity
- the type of programming cable used
- where the edited program resides

47. 39. What is the largest integer number that a PLC counter function can reach if it uses a 16 bit register?

*Mark only one oval.*

- 32768
- 65535
- 65536
- 65537

48. 40. An OR function implemented in ladder logic uses

*Mark only one oval.*

- Normally-closed contacts in series
- Normally-open contacts in series
- A single normally-closed contact
- Normally-open contacts in parallel

49. 41. A good application for a timed interrupt in a PLC program would be

*Mark only one oval.*

- A communications function block
- A PID function block
- A math function block
- A motor start/stop rung

50. 42. Which one of the following is not a PLC manufacturer

*Mark only one oval.*

- Siemens
- Mitsubishi
- Microsoft
- ABB

51. 43. Solenoids, lamps, motors are connected to:

*Mark only one oval.*

- Analog output
- Digital output
- Analog input
- Digital input

52. 44. From the following which statements is correct?

*Mark only one oval.*

- Ladder logic is a PLC graphical programming technique introduced in the last 10 years.
- A ladder logic program is hard to analyze because it is totally different when compared with the equivalent relay logic solution.
- The number of ladder logic virtual relays and input and output instructions is limited only by memory size.
- The number of contacts for a mechanical relay is limited to number of coils on the relay.

53. 45. Which of the following statements is NOT correct?

*Mark only one oval.*

- The status of each input can be checked from one location and outputs can be forced on and off.
- All symbols in the RLL represent actual components and contacts present in the control system.
- PLCs are not as reliable as electromechanical relays in RLL.
- Input (-| |-) and output (- ( ) -) instruction symbols in the ladder logic represent only data values stored in PLC memory.

54. 46. Find the non-correct statements from the following

*Mark only one oval.*

- If a problem in a PLC module occurs, the module can be changed in a matter of minutes without any changes in wiring.
- Outputs can be paralleled on the same rung.
- The physical wires between the input and output field devices and the PLC input and output modules are the only signal wires required in the PLC system.
- The cost and size of PLCs have increased significantly in the last 10 years.

55. 47. Which statement is not true for a single pole double throw relay

*Mark only one oval.*

- It is called an SPDT type of relay.
- It has one common contact
- It has two positions (NC and NO).
- It has a center off position.

56. 48. Which option is the correct alternative for a single pole double throw relay

*Mark only one oval.*

- Insulators are used in the armature to isolate the electrical switching contacts from the rest of the relay components.
- The NC contact and the pole are in contact when the relay is off
- It has just one coil.
- All options are true.

57. 49. The \_\_\_\_\_ is moved toward the relay electromagnet when the relay is on.

*Mark only one oval.*

- Armature
- Coil
- NO contact
- NC contact

58. 50. When a relay is NOT energized:

*Mark only one oval.*

- There is an electrical path through the NO contacts
- There is an electrical path through the NC contacts
- Neither the NO or the NC contacts have an electrical path
- Both the NO and the NC contacts have an electrical path

59. 51. Which of the following RLL applications is not normally performed in early automation systems?

*Mark only one oval.*

- On/off control of field devices
- Logical control of discrete devices
- On/off control of motor starters
- Proportional control of field devices

60. 52. In a current sinking DC input module

*Mark only one oval.*

- The current flows out of the input field device
- Requires that a AC sources be used with mechanical switches
- The current flows out of the input module
- Currents can flow in either direction at the input module

61. 53. When \_\_\_\_ contacts are actuated, they disrupt the power supply through them.

*Mark only one oval.*

- normally open type
- normally closed type
- oth 1. and 2.
- noone from abovet

62. 54. The type of memory which is fast and temporarily stores the data which are immediately required for use is called as\_\_\_\_\_.

*Mark only one oval.*

- HDD
- ROM
- RAM
- SSD

63. 55. How is the speed of operation of conventional relay system as compared to digital controllers?

*Mark only one oval.*

- very slow
- very fast
- same
- almost similar

64. 56 \_\_\_\_ of PLCs can be done in very little time.

*Mark only one oval.*

- Programming
- Installation
- Commissioning
- All of the above

65. 57. From which of the following is type of control system.

*Mark only one oval.*

- Closed loop control system
- Open loop control system
- Both (1) & (2)
- None of the above

66. 58. What is the full form of SCADA?

*Mark only one oval.*

- Supervision Control And Data Acquisition
- Supervisory Control And Data Accumulation
- Supervisory Control And Data Acquisition
- Supervisory Controller And Data Acquisition

67. 59. \_\_\_ is a digital electronic device that uses programmable memory to store instructions.

*Mark only one oval.*

- Programmable logic controller
- Servomechanism
- Both (1) & (2)
- None of the above

68. 60. A major part of the automatic control theory applies to the:

*Mark only one oval.*

- Casual systems
- non-Casual systems
- Linear Time invariant systems
- non-linear Time invariant systems

69. 61. With feedback \_\_\_\_\_ increases.

*Mark only one oval.*

- system stability
- gain
- disturbance
- overshoot



70. 62. From which of the following transfer function can be obtained ?

*Mark only one oval.*

- signal flow graph
- output-input ratio
- standard block system
- analogous table

71. 63. Loop gain is equal to:

*Mark only one oval.*

- Product of all branch gains while traversing the forward path
- Summation of all branch gains in a loop
- Product of all branch gains in a loop
- Sum of all branch gains while traversing the forward path

72. 64. The advantage of block diagram representation is that

*Mark only one oval.*

- it is possible to evaluate the contribution of each component to the overall performance of the system.
- it is not possible to evaluate the contribution of each component to the overall performance of the system.
- it is not possible to evaluate the system stability
- none is correct

73. 65. The Static system can be defined as:

*Mark only one oval.*

- Output of the system depends only on the present input.
- Output of the system depends on future inputs
- Output of a system depends only on the received inputs
- Output of a system depends on the present as well as past input.

74. 66. If the initial conditions for a system are inherently zero, what does it physically mean?

*Mark only one oval.*

- The system is at rest but stores energy
- The system is working but does not store energy
- The system is at rest or no energy is stored in any of its part
- The system is working with zero reference input

75. 67. A control system with excessive noise, is likely to suffer from

*Mark only one oval.*

- saturation in amplifying stages
- loss of gain
- vibrations
- oscillations

76. 68. Traffic light system is the example of

*Mark only one oval.*

- open loop
- close loop
- both
- none

77. 69. \_\_\_ is a closed loop system.

*Mark only one oval.*

- Auto-pilot for an aircraft
- Direct current generator
- Car starter
- Electric switch

78. 70. In closed loop control system, with positive value of feedback gain the overall gain of the system will

*Mark only one oval.*

- decrease
- increase
- be unaffected
- any of the above

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