

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

Course Name - --Physics II

Course Code - DEE202

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Answer all the questions. Each question carry one mark.

9. 1. What are the units of power \*

*Mark only one oval.*

- Horsepower
- Joules per second
- Watts
- all the choices are correct

10. 2. In a He-Ne laser, the laser transition takes place in \*

*Mark only one oval.*

- He only
- Ne only
- Ne first, then in He
- He first, then in Ne

11. 3. A semiconductor has generally ..... valence electrons. \*

*Mark only one oval.*

- 2
- 3
- 4
- 5

12. 4. Heat produced by current in wire during 't' time is \*

*Mark only one oval.*

- $H = I^2R$
- $H = IRt$
- $H = I^2t$
- $H = I^2Rt$

13. 5. The resistance of two lamps connected in a series across a battery is in the ratio 4:5. Their power will be in the ratio \*

*Mark only one oval.*

- 4:5  
 5:4  
 16:25  
 25:16

14. 6. SI unit for force is \*

*Mark only one oval.*

- Kilograms  
 Newton  
 Joules  
 Acceleration

15. 7. Which of the following is a semi-conductor \*

*Mark only one oval.*

- Diamond  
 Arsenic  
 Phosphorous  
 Gallium arsenide

16. 8. When condition  $R_1/R_2 = R_3/R_4$  is satisfied, current in galvanometer of Wheatstone bridge is \*

*Mark only one oval.*

- 1
- 0
- minimum
- Maximum

17. 9. A circuit contains two equal resistances in parallel \*

*Mark only one oval.*

- current is same in both
- large current flows in larger resistor
- potential difference across each is same
- smaller resistance has smaller conductance

18. 10. Momentum is conserved in \*

*Mark only one oval.*

- an elastic collision of two balls
- an inelastic collision of two balls
- the absence of an external force
- all of these

19. 11. Type of x-rays used to detect break in bone is \*

*Mark only one oval.*

- hard
- soft
- both A and B
- moderate

20. 12. Bridge rectifier is an alternative for \*

*Mark only one oval.*

- perpendicular to the magnetic field
- parallel to the magnetic field
- far away from the magnetic field
- inside a magnetic field

21. 13. An ammeter should have ..... resistance \*

*Mark only one oval.*

- infinite
- very large
- very low
- none of these



22. 14. What happens to the body on which work is done \*

*Mark only one oval.*

- it loses energy
- it gains energy
- no change in the energy
- first it loses then it gain

23. 15. In characteristic X-ray emission  $K\alpha$  line is due to transition of electron from atomic shell \*

*Mark only one oval.*

- L to K
- K to L
- M to K
- M to L

24. 16. A silicon p-n junction diode in forward biased condition has a voltage drop closer to \*

*Mark only one oval.*

- 0.1 V
- 0.7 V
- 1.7 V
- 2.1 V

25. 17. Lenz's law is based on \*

*Mark only one oval.*

- charge
- mass
- momentum
- energy

26. 18. Reciprocal of resistance is called \*

*Mark only one oval.*

- transmission
- resistivity
- inspection
- conductance

27. 19. The commercial unit of Energy is \*

*Mark only one oval.*

- Watt
- Watt-hour
- Kilowatt-hour
- Kilowatt

28. 20. If the current in the circuit for heating the filament is increased, the cut off wavelength \*

*Mark only one oval.*

- will increase
- will decrease
- will remain same
- will be zero

29. 21. In He-Ne laser neon atoms get energy \*

*Mark only one oval.*

- on collision with He atoms
- from chemical reactions
- from electrical pumping
- from optical pumping

30. 22. The force on a conductor of length  $l$  carrying current  $i$ , placed perpendicular to a uniform magnetic field  $B$  is \*

*Mark only one oval.*

- zero
- $iB/l$
- $iBl$
- $Bl/i$

31. 23. Which of the following processes requires the most work \*

*Mark only one oval.*

- A person holds a 1kg weight stationary with outstretched arms
- A person lifts a 1kg weight 1m off the floor
- A person lifts a 10kg weight 1m off the floor
- A 10kg weight rests on a table

32. 24. \*

*The sequences of colored bands in two carbon resistors  $R_1$  and  $R_2$  are*

*i) brown, green, blue and ii) orange, black, green.  $\frac{R_1}{R_2} = ?$*

*Mark only one oval.*

- 4
- 5
- 6
- 7

33. 25. The ratio of He to Ne in a He-Ne laser is of the order of \*

*Mark only one oval.*

- 1:15
- 1:1
- 1:10
- 5:1

34. 26. What is the unit of magnetic field? \*

*Mark only one oval.*

- Tesla
- Faraday
- Newton
- Newton / meter

35. 27. Current-voltage graph of ohmic devices is a \*

*Mark only one oval.*

- linear graph
- non-linear graph
- parabolic graph
- hyperbola graph

36. 28. \*

A wire of resistance  $4\Omega$  is stretched to twice its original length, its new resistance is  
*Mark only one oval.*

  $8\Omega$  Option 1  $1\Omega$  Option 2  $16\Omega$  Option 3  $12\Omega$  Option 4

37. 29. Displacement is a \*

*Mark only one oval.*

 scalar quantity vector quantity Derived quantity none of these Option 5

38. 30. The process of population inversion is to increase the number of atoms in the \*

*Mark only one oval.*

- excited state
- ground state
- intermediate state
- excited state and ground state

39. 31. Addition of pentavalent impurity to a semiconductor creates many ..... \*

*Mark only one oval.*

- Free electrons
- Holes
- Valence electrons
- Bound electrons

40. 32. Sunlight is directly converted into electrical energy by using \*

*Mark only one oval.*

- cells
- solar cells
- electric generator
- electrical energy

41. 33. Least current will flow through \*

*Mark only one oval.*

- 25 ohm resistor
- 5 ohm resistor
- 15 ohm resistor
- 18 ohm resistor

42. 34. "Energy can neither be created nor be destroyed, but it can be changed from one form to another", this law is known as \*

*Mark only one oval.*

- kinetic energy
- potential energy
- conservation of energy
- conservation principle

43. 35. In He-Ne laser, the activator atom \*

*Mark only one oval.*

- Helium
- Neon
- Helium and Neon both
- none of these



44. 36. In semiconductor the forbidden energy gap lies \*

*Mark only one oval.*

- Just below the conduction band
- Just above the conduction band
- Either above or below the conduction band
- Between the valence band and conduction band

45. 37. "Sum of all currents meeting at a point is zero", stated law is \*

*Mark only one oval.*

- Kirchhoff's first law
- Kirchhoff's second law
- Kirchhoff's third law
- Kirchhoff's fourth law

46. 38. In order to increase range of ammeter, value of shunt resistance is \*

*Mark only one oval.*

- increased
- decreased
- unchanged
- zero

47. 39. A car traveling at a speed of 40 km/hr increases its speed to 80 km/hr. As a result its kinetic energy increases \*

*Mark only one oval.*

- 2 times  
 4 times  
 8 times  
 none of these

48. 40. X-ray beam can be deflected by \*

*Mark only one oval.*

- a magnetic field  
 an electric field  
 both magnetic field and electric field  
 neither by an electric field nor by a magnetic field

49. 41. The depletion region within a p-n junction is reduced when the junction has \*

*Mark only one oval.*

- Zero bias  
 Forward bias  
 Reverse bias  
 All of these

50. 42. A fuse wire is \*

*Mark only one oval.*

- a conductor
- an insulator
- a semi-conductor
- made of any material

51. 43. Current produces magnetic effect due to its \*

*Mark only one oval.*

- mechanical energy
- magnetic field
- electrical field
- chemical energy

52. 44. When a body falls freely under gravity, then the work done by the gravity is \*

*Mark only one oval.*

- positive
- negative
- zero
- infinity

53. 45. If  $V$  be the potential difference between cathode and target (anode) in collide tube \*

*Mark only one oval.*

- $V_{\max} = (hc)/(eV)$
- $V_{\max} = (eV)/h$
- $V_{\max} = (eh)/V$
- $V_{\max} = (hV)/c$

54. 46. Avalanche breakdown in a diode occurs when \*

*Mark only one oval.*

- Potential barrier is reduced to zero
- Forward electric current exceeds certain value
- Reverse bias exceeds a certain value
- None of these

55. 47. In order to do work, energy is \*

*Mark only one oval.*

- transferred or converted
- used up
- lost
- lost or transferred

56. 48. The wavelength of of He-Ne laser is \*

*Mark only one oval.*

632.8 nm

600 nm

532.8 nm

500 nm

57. 49. The magnetic field inside a solenoid is \*

*Mark only one oval.*

strong at N pole and weak at S pole

strong at S pole and weak at N pole

uniform throughout

zero

58. 50. \*

Voltage of a device having resistance  $5 \Omega$  and current 4 A will be

*Mark only one oval.*

10 V

15V

20V

25V

59. 51. Unit of electric charge is \*

*Mark only one oval.*

- Coulomb
- Coulomb/sec
- Volt
- None of these

60. 52. Magnitude of displacement from initial position to final position is \*

*Mark only one oval.*

- straight line
- curved line
- circle
- none of these

61. 53. Which process gives the laser its special properties as an optical source \*

*Mark only one oval.*

- Dispersion
- Stimulated absorption
- Spontaneous emission
- Stimulated emission

62. 54. When a pure semiconductor is heated, its resistance ..... \*

*Mark only one oval.*

- Goes up
- Goes down
- Remains the same
- Can't say

63. 55. Resistances used in circuit of Wheatstone bridge are \*

*Mark only one oval.*

- 2
- 3
- 4
- 5

64. 56. An electric heater is rated 1100W at 220V. The amount of energy consumed in kilowatt-hr by it in 4 hour is \*

*Mark only one oval.*

- 2.2
- 4.4
- 6.2
- 2.1

65. 57. Light which has a wide band of wavelength is called \*

*Mark only one oval.*

- coherent
- incoherent
- infrared
- microwave

66. 58. A semiconductor has.... temperature co-efficient of resistance. \*

*Mark only one oval.*

- Zero
- Positive
- Negative
- None of these

67. 59. Filament bulbs are best examples of the \*

*Mark only one oval.*

- non-ohmic devices
- resistive devices
- ohmic devices
- electric devices



68. 60. In superconductivity the conductivity of a material becomes \*

*Mark only one oval.*

- Zero
- Finite
- Infinite
- None of these

69. 61. A particle is thrown vertically upward with a velocity  $40 \text{ ms}^{-1}$  from the ground. It will reach the ground after

*Mark only one oval.*

- 8 s
- 4 s
- 20 s
- 16 s

70. 62. A gun recoiling when it is fired is an example of

*Mark only one oval.*

- conservation of momentum
- conservation of angular momentum
- conservation of energy
- none of these

71. 63. A mass is revolving in a circle which is in the plane of the paper. The direction of angular acceleration

*Mark only one oval.*

- upward to the radius
- towards the radius
- tangential
- at right angle to angular velocity

72. 64. Joule/second is related to

*Mark only one oval.*

- Watt
- Newton
- Pascal
- Torr

73. 65. Heating effect of electric current is used in

*Mark only one oval.*

- electric kettle
- fan
- freezer
- TV

74. 66. Thermocouple is source of current that converts heat energy to

*Mark only one oval.*

- chemical energy
- mechanical energy
- solar energy
- electrical energy

75. 67. No force acts on a current carrying conductor when it is placed

*Mark only one oval.*

- perpendicular to the magnetic field
- parallel to the magnetic field
- far away from the magnetic field
- inside a magnetic field

76. 68. Which instrument is used for converting electrical energy into mechanical energy

*Mark only one oval.*

- Electric generator
- Electric motor
- Electric iron
- Electric oven

77. 69. The SI unit of self-inductance is

*Mark only one oval.*

- Gauss
- Henry
- Tesla
- None of these

78. 70. Who has stated the Right hand Thumb Rule?

*Mark only one oval.*

- Orsted
- Fleming
- Einstein
- Maxwell

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