

138/2014

1. Which one of the following is called as valence electron in an atom ?
 (A) No. of electrons in inner orbit
 (B) No. of electrons in the N shell
 (C) No. of electrons in the outermost orbit
 (D) No. of electrons in the M shell
2. In SI unit one coulomb corresponds to a quantity of electricity of about _____ electrons.
 (A) 6.24×10^{18} (B) 6.24×10^8 (C) 62.4×10^8 (D) 62.4×10^{18}
3. Which material is having the negative temperature co-efficient among the following :
 (A) Copper (B) Aluminium (C) Tungsten (D) Carbon
4. The equivalent resistance of the parallel circuit is _____ than the smallest single resistance.
 (A) Greater (B) Smaller (C) Equal (D) Half
5. When resistance and current are known _____ formula can be applied to find power in watts.
 (A) I^2R (B) $\frac{I}{R}$ (C) IR^2 (D) $\frac{R}{I^2}$
6. A 250 V lamp has its hot resistance of 625 ohm. What is the value current taken by the lamp ?
 (A) 0.4 A (B) 4 A (C) 2 A (D) 0.625 A
7. In a lead acid battery there are 6 positive plates. How many number of negative plates are there in the same battery ?
 (A) 4 (B) 5 (C) 7 (D) 8
8. A capacity of the storage cell is always specified as _____.
 (A) Ampere hour rating (B) Ampere rating
 (C) Full voltage rating (D) Voltage/Cell rating
9. Which instrument is used to measure the specific gravity of a battery ?
 (A) Pyrometer (B) Hydrometer (C) Lactometer (D) Fuel gauge

10. Which among the following constitutes the major load for an automobile battery ?
(A) Parking lights (B) Brake lights (C) Spark plug (D) Self starter
11. Cells are connected in parallel :
(A) To increase the internal resistance
(B) To increase the voltage output
(C) To increase the efficiency
(D) To increase the current capacity
12. The active material on the positive plates of a fully charged lead acid cell is :
(A) Lead peroxide (B) Lead pentoxide (C) Red lead (D) Pure lead
13. While Fleming's right hand rule to find the direction of induced emf, the thumb points towards :
(A) Direction of flux
(B) Direction of induced emf
(C) Direction of motion conductor if forefinger points along the lines of flux
(D) Direction of motion of the conductor if forefinger points in the direction of induced emf
14. The material for commutator brushes is generally :
(A) Carbon (B) Mica (C) Copper (D) Cast iron
15. The armature core of DC generator is usually made of :
(A) Cast iron (B) Silicon steel
(C) Copper (D) Non-ferrous material
16. The emf generated in a DC generator is directly proportional to :
(A) Number of poles (B) Flux per pole
(C) Speed of armature (D) All of the above
17. The polarity of DC generator can be reversed by :
(A) Increasing field current
(B) Reversing field current
(C) Reversing field current as well as direction of rotation
(D) Any of the above

18. The number of brushes in commutator depends on :
(A) Amount of current to be collected
(B) Speed of Armature
(C) Type of Winding
(D) Voltage
19. Which spring is used to prevent the pinion from striking the flywheel accidentally ?
(A) Drive spring (B) Sleeve spring
(C) Anti drift spring (D) Clutch spring
20. The axial starter works on the principle of _____ mechanism.
(A) Our running clutch (B) Sliding armature
(C) Friction clutch (D) None of the above
21. In an open core ignition coil, the resistance of the winding is of the order of :
(A) 20 - 40 ohm (B) 20 - 40 k ohm (C) 2 - 4 k ohm (D) 2 - 4 ohm
22. The usual value of cam angle for a six-cylinder engine is of the order of :
(A) 32 - 37° (B) 26 - 30° (C) 39 - 42° (D) 20 - 25°
23. Which are the two general ways of spark advance mechanism ?
(A) Centripetal and compression
(B) Centrifugal and vacuum
(C) Centrifugal and compression
(D) Centripetal and vacuum
24. Spark plug "reach" is referred to :
(A) Distance from the gasket seat to the end of the threads
(B) Distance between electrodes
(C) The total length of the spark plug
(D) None of the above
25. An alternator is a :
(A) Homopolar machine (B) Hetropolar machine
(C) Either of (A) or (B) above (D) None of the above

26. What will happen to the Hack saw blade, if any short exists in the armature winding when it is tested by external growler ?
(A) Blade remains stationary
(B) The blade will vibrate rapidly with noise
(C) The blade is attracted by the armature winding
(D) The blade will repel from the armature winding
27. The illumination of a surface is _____ to the square of its distance from the source.
(A) Directly proportional (B) Equal
(C) Inversely proportional (D) None of the above
28. Which is the pocket size instrument used to measure illuminance ?
(A) Lumen meter (B) Light meter (C) Test lamp (D) Arc lamp
29. One watt is equal to :
(A) One volt/One ohm (B) One Joule/second
(C) One Farad (D) One ohm/One ampere
30. Ammeters are always connected in _____ with the load.
(A) Series (B) Parallel
(C) Either parallel or series (D) None of the above
31. The most commonly used transistor circuit arrangement is _____ configuration.
(A) Common Base (B) Common Emitter
(C) Common Collector (D) None of these
32. A Zener diode is used as a _____.
(A) Rectifier (B) Switch (C) Amplifier (D) Voltage regulator
33. What is the ripple factor of a full-wave rectifier ?
(A) 1.21 (B) 0.99 (C) 0.48 (D) 0.50
34. What is the knee voltage of silicon PN junction diode ?
(A) 0.7 V (B) 1.1 V (C) 0.3 V (D) 0.1 V

35. The addition of trivalent impurities creates _____ .
(A) Holes (B) Free electrons
(C) Valence electrons (D) None of the above
36. The function of an alternator in an automobile is to :
(A) Supply electric power
(B) Convert mechanical energy into electrical energy
(C) Continually charge the battery
(D) Partially convert engine power into electric power
37. If the air fuel mixture ignites before the spark takes place at the spark plug, the condition is called :
(A) Detonation (B) Ignition (C) Pre-ignition (D) Rumble
38. The air gap between the central electrode and ground electrode of a spark plug is around :
(A) 0.2 mm (B) 1.5 mm (C) 1 mm (D) 0.5 mm
39. The starter motor is driven by :
(A) Chain drive (B) Gear drive
(C) Flat belt drive (D) V-Belt drive
40. The ignition coil is used to :
(A) Step up current (B) Step down current
(C) Step up voltage (D) Step down voltage
41. With the increase of battery temperature, the specific gravity of electrolyte :
(A) Increases (B) Decreases
(C) Remains same (D) None of the above
42. The starting system includes :
(A) A battery, a starter and an ignition switch
(B) A battery, a distributor and an ignition switch
(C) A battery, a starter and a distributor
(D) A distributor, a starter and an ignition switch

43. The most accurate ignition system of a spark ignition engine is :
(A) Magneto system
(B) Battery switch
(C) Electronics control unit system
(D) Magneto and Electronic system
44. Which of the following bulb in a car will have the least wattage ?
(A) Head light bulb
(B) Stop light bulb
(C) Parking light bulb
(D) Ignition warning bulb
45. In Diesel engine the duration between the time of injection and the time of ignition is called :
(A) Split cut off
(B) Delay period
(C) Injection period
(D) Ignition period
46. How many cells are used in a 12 V car battery ?
(A) 2
(B) 4
(C) 8
(D) 6
47. The brake warning light warns the driver :
(A) Water in the master cylinder
(B) Air in the hydraulic system
(C) Failure of the primary or secondary circuit of hydraulic system
(D) Power-brake failure
48. Which device prevents the generation of excessive voltage ?
(A) Dyer drive
(B) Current limiter
(C) Barrel drive
(D) Voltage regulator
49. The force tending to move the electricity is called :
(A) Current
(B) E.M.F
(C) Potential difference
(D) Resistivity
50. The source of AC supply is :
(A) AC generator
(B) Induction motor
(C) DC motor
(D) Lead acid cell
51. The polarity of DC voltage source :
(A) Changes
(B) Changes at time
(C) Does not change
(D) Either (A) or (B)

52. Cable joints are soldered for :
(A) Good mechanical strength
(B) Electrical conductivity
(C) To avoid corrosion
(D) All the above
53. The voltage induced in a conductor or coil by its own magnetic field is called :
(A) Mutually induced emf (B) Self induced emf
(C) Reactance voltage (D) Magneto motive force
54. In a centre tap circuit, if voltage between one end of secondary winding and centre tap is 300 V peak. Then PIV is :
(A) 300 V (B) 100 V (C) 150 V (D) 600 V
55. A capacitor blocks :
(A) AC but allow DC (B) DC but allow AC
(C) Both (D) None of the above
56. In a semiconductor, the energy gap between valence band and conduction band is nearly :
(A) 1 eV (B) 15 eV (C) 5 eV (D) 10 eV
57. Reverse resistance of a diode is of the order of :
(A) Ω (B) $m\Omega$ (C) $k\Omega$ (D) $M\Omega$
58. The light emitting diode (LED) :
(A) Is usually made from silicon
(B) Uses reversed biased junction
(C) Gives a light output which increase with increase in temperature
(D) Depends on the recombination of holes and electrons
59. The input and output signals of a common-emitter amplifier are :
(A) Always equal (B) Out of phase
(C) Always negative (D) In phase

60. In a transistor with normal bias, the emitter junction :
(A) has a high resistance
(B) has low resistance
(C) is reversed
(D) emits such carriers into base which are in majority (in the base)
61. A constant current source supplies a current of 300 mA to a load of 1 k Ω . When the load is changed to 100 Ω the load current will be ?
(A) 3 A (B) 30 mA (C) 300 mA (D) 600 mA
62. In a lead acid battery, the level of the electrolyte should be :
(A) Equal to that of the plates (B) Below the level of plates
(C) Above the level of plates (D) Any where in the cell
63. Fuse rating is expressed in terms of :
(A) Voltage (B) Current (C) kVA (D) VAR
64. A fuse wire should have :
(A) Low resistance and high melting point
(B) High resistance and high melting point
(C) Low resistance and low melting point
(D) High resistance and low melting point
65. The stator of an alternator consist of :
(A) An iron core (B) Stator winding
(C) Both (A) and (B) above (D) None of the above
66. The frequency of voltage generated in an alternator depends upon :
(A) Number of poles (B) Rotative speed
(C) Both (A) and (B) above (D) Rotative speed and kVA rating
67. In general the design of the current regulator is such that its main actuating winding carries full :
(A) Generator voltage (B) Generator output
(C) Field current (D) Battery voltage

68. The material which reflects all wave length in the spectrum of light appear to be :
(A) Black to white (B) Opaque (C) Transparent (D) Green to red
69. Glare is caused due to :
(A) Excessive luminance
(B) Excessive lighting contrast in the field of vision
(C) Either (A) or (B)
(D) None of the above
70. Luminous flux is :
(A) The rate of energy radiation in the form of light wave
(B) The part of light energy radiated by sun that is received on earth
(C) Scattering of light over dust particles
(D) Measured in Lux
71. A perfect diffuser surface is one that :
(A) Transmits all the incident light
(B) Absorbs all the incident light
(C) Diffuses all the incident light
(D) All of the above
72. Most effective parameter of a filament lamp due to variation in operating voltage is :
(A) Life (B) Light output
(C) Luminous efficiency (D) Wattage
73. The lamp is provided with reflector in order to :
(A) Avoid glare (B) Provide better illumination
(C) Protect the lamp (D) All the above
74. Battery driven vehicles :
(A) are easy to control and very convenient to use
(B) have low maintenance cost
(C) cause no pollution
(D) all the above

75. The armature reaction of an alternator influences :
(A) Winding losses (B) Operating speed
(C) Generated voltage per phase (D) Wave form of voltage generated
76. As the speed of an alternator increases :
(A) The frequency increases
(B) The frequency decreases
(C) The frequency remains constant but power factor decreases
(D) None of the above
77. Which of the following converts electrical energy to radiant heat ?
(A) Solar cell (B) Storage battery
(C) Wankel engine (D) Incandescent lamp
78. In automobile the sound is produced by horn due to :
(A) Magnetic striction (B) Vibrating diaphragm
(C) Moving coil (D) Oscillating coil
79. Miniature lamps automobiles are used for :
(A) Tail lamp (B) Dash board lamp
(C) Side lamp (D) All of the above
80. The life of a spark plug depends upon :
(A) Careful selection of materials
(B) Design and assembly technique
(C) Testing of the materials
(D) All of the above
81. Gautam Buddha was born at :
(A) Haridwar (B) Lumbini (C) Ujjain (D) Bodha Gaya
82. Toxicology is the study of _____.
(A) Bones (B) Fossils (C) Teeth (D) Poisons
83. Sardar Sarovar Dam is built across the river _____.
(A) Narmada (B) Krishna (C) Kaveri (D) Gomathi

84. Who was popularly known as the Father of Indian Renaissance ?
(A) Swami Vivekananda (B) Raja Rammohan Roy
(C) Mahatma Gandhi (D) Dr. Bhimrao Ambedkar
85. The book 'war and peace' is written by :
(A) George Orwell (B) Charles Dickens
(C) Leo Tolstoy (D) Mark Twain
86. Mogadishu is the capital of :
(A) Rwanda (B) Romania (C) Senegal (D) Somalia
87. The parliament of Israel is known as _____.
(A) Duma (B) Federal Assembly
(C) Knesset (D) Majlis
88. Who won Ezhuthachan Award for 2013 ?
(A) M.K. Sanu (B) Prabha Varma
(C) Vilasini (D) M.T. Vasudevan Nair
89. Sadhujana Paripalana Sangham was founded by :
(A) Sree Narayana Guru (B) Vagbhatananda
(C) Chattampi Swami (D) Ayyankali
90. Human right day is observed on _____.
(A) December 10 (B) December 9 (C) November 9 (D) September 7
91. In which amendment did the voting age is lowered from 21 to 18 ?
(A) 46th amendment (B) 61st amendment
(C) 62nd amendment (D) 47th amendment
92. St. Thomas came to Kerala in _____.
(A) AD 12 (B) AD 52 (C) AD 49 (D) AD 46
93. The book "Bahuleya Ashtakam" is written by :
(A) Brahmananda Sivayogi (B) Vagbhatananda
(C) Sree Narayana Guru (D) Chattampi Swami

94. The capital city of venad kingdom was _____.
(A) Travancore (B) Kollam (C) Kochi (D) Kottayam
95. Myopia can be corrected by _____.
(A) Convex lenses (B) Cylindrical lenses
(C) Vertical lenses (D) Concave lenses
96. The civil disobedience movement was started in _____.
(A) 1930 (B) 1935 (C) 1940 (D) 1927
97. Who founded the political party called Forward Block ?
(A) B.R. Ambedkar (B) C.R. Das
(C) Subhash Chandra Bose (D) Vinoba Bhawe
98. The term 'Fourth Estate' refers to _____.
(A) Legislature (B) Executive
(C) Judiciary (D) Press
99. The book 'Daughter of the East' is the autobiography of _____.
(A) Aunng San Suu Kyi (B) Indira Gandhi
(C) Ghalidhasia (D) Benazir Bhutto
100. Who is known as the Grand Old Man of India ?
(A) Dadabhai Naoroji (B) Rabindranath Tagore
(C) Bal Gangadhar Tilak (D) Motilal Nehru

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