

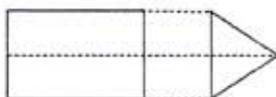
RRB Secunderabad Sr. Section Engineers Exam

(Held on 21.12.2014)

- To use an AC motor in a DC circuit, which equipment would be required additionally?
(A) Inductor (B) Capacitor (C) Rectifier (D) Inverter
- Stomata are located in-
(A) Red blood cells (B) Chlorophyll (C) Stomach (D) Leaves
- A hardened steel file is used for removing metal or giving good finish to metals. Arrange the files in the increasing order of smoothness.
(1) Rough file (2) Bastard file (3) Second cut file (4) Smooth file
(A) 4, 3, 2, 1 (B) 1, 2, 3, 4 (C) 2, 1, 3, 4 (D) 4, 3, 1, 2
- Bile is secreted by-
(A) Stomach (B) Liver (C) Large intestine (D) Gall bladder
- A shop reduced the price of an article by 25%. Its sale for that article increased by 25%. What is the net effect on sales in rupees?
(A) No change (B) Increase by 5.75% (C) Decrease by 5.75% (D) Decrease by 6.25%
- Out of the following, which is NOT a type of welding?
(A) AC Arc (B) DC Arc
(C) MIG (D) All of these are different types of weldings
- "Ensure correct joint preparation, correct nozzle size and filler rod size and correct travel speed". We are talking about-
(A) Gas welding (B) Arc welding (C) Thermit welding (D) Steam welding
- Perform the subtraction operation of binary digits 1001 - 10. The result is:
(A) 1010 (B) 101 (C) 100 (D) 111
- Match the following -

1. Lysosomes	a. PowerHouse
2. DNA	b. Chromosomes
3. Mitochondria	c. Suicide bags

- (A) 1-a, 2-c, 3-b (B) 1-c, 2-b, 3-a (C) 1-b, 2-c, 3-a (D) 1-c, 2-a, 3-b
- In a car race course, the race starts in North East direction. The road starts curving in a circular path after 5 km. After $\frac{3}{4}$ th of the circle the road is straight. In which direction would the cars be running on this straight road?
(A) North west (B) South west (C) South east (D) Insufficient data
 - Air India's losses in previous financial year were to the tune of (in crores of rupees):
(A) 4 (B) 40 (C) 400 (D) 4000
 - Based on the choice of the 'Q' point on the current voltage characteristics of the transistor, the amplifiers are classified as:
(A) Class I, II, III and IV (B) Class A, B, C and AB (C) Class A, B, C and D (D) Class IA, IB, IIA and IIB
 - Conservation of energy corresponds to which law of thermodynamics?
(A) Zeroth law (B) First law (C) Second law (D) Third law
 - Consider the following orthogonal projections of an object.



This object is a-

- (A) Tetrahedron (B) Conical cylinder (C) Prism (D) Trapezium

15. Which of the following logic gates is a universal gate i.e. its combinations can be used to construct the logic of any other logic gate?
 (A) OR (B) AND (C) NAND (D) NOT
16. A man drives a car 20 km in the North east direction and further 20 km in the South east direction. In which direction will he have to drive to come back to his starting point?
 (A) East (B) West (C) North (D) South
17. Woolen clothes keep the body warm in winter because-
 (A) Wool is a bad conductor of heat (B) Wool is a good conductor of heat (C) Wool increases body temperature (D) Wool decreases body temperature
18. In potable water, the dissolved oxygen is stipulated as-
 (A) $<6\mu\text{g/l}$ (B) $>6\mu\text{g/l}$ (C) $<6\text{mg/l}$ (D) $>6\text{mg/l}$
19. A, B & C invest ₹ 26000, ₹ 34000 and ₹ 10000 respectively in a business. They earn a Profit of ₹ 3500. B's share in the profit is:
 (A) ₹ 1200 (B) ₹ 1500 (C) ₹ 1700 (D) ₹ 1900
20. What is the purpose of turbo charging a diesel engine?
 (A) Increase power of engine by burning more fuel (B) Increase the fuel injection and rpm
 (C) Increase exhaust gas temperature to increase thermal efficiency (D) Increase inlet air so that engine fuel efficiency and power to weight ratio increases
21. Chemical bonding which results in formation of molecules from atoms is basically-
 (A) Nuclear force (B) Short range forces (C) Electrostatic force (D) Gravitational force
22. Average Albedo (overall) of the Earth is:
 (A) 5×10^6 candela/day (B) 5×10^7 candela/day (C) 30 to 35% (D) 60 to 65%
23. According to IPCC, three factors contributing to Global warming are :
 1) CO₂ emissions
 2) Change of land use deforestation
 3) Non-veg food
 Place them in the order of their contribution to global warming.
 (A) 1, 2, 3 (B) 1, 3, 2 (C) 3, 1, 2 (D) 2, 1, 3
24. "Khalsa" was founded by-
 (A) Guru Gobind Singh (B) Guru Ramdas (C) Guru Nanak (D) Guru Arjun Dev
25. "Common Base" configuration refers to the configuration of a-
 (A) Rectifier (B) Transistor (C) Diode (D) Inverter
26. The fidelity of a radio receiver relates to-
 (A) Reproduction of a. f waves (B) Detection of carrier waves (C) Tuning of radio waves (D) None of these
27. What is the common property between LiAlH₄, Sodium amalgam and NaBH₄?
 (A) They are used in removing slag from molten metals www.previouspapers.in
 (B) They are used in manufacturing esters
 (C) They are reducing agents (D) They are coated on welding electrodes
28. What is the common between Rockwell, Brinell and Shore? They pertain to-
 (A) Surface finish (B) Heat treatment (C) Metal turning (D) Hardness

29. Match the following:

1. Rectifier	a. Power electronics, Motor speed control, Battery charging, Phase control
2. Transistor	b. Rectifiers, Wave clipper circuits
3. SCR	c. Amplifiers, Switches

- (A) 1-a, 2-c, 3-b (B) 1-b, 2-a, 3-c (C) 1-b, 2-c, 3-a (D) 1-c, 2-a, 3-b

30. Value of π (approx. value 3.14) is :

- (A) Terminating decimal (B) Recurring decimal
(C) Non-terminating non-repeating decimal (D) Indeterminate

31. In a building, water is to be pumped to a height of 10m at the rate of 1 litre/second. Power requirement would be approx:

(Take 'g' 10 m/sec²)

- (A) 10 Watts (B) 100 Watts (C) 500 Watts (D) 1 kW

32. Which of the following software is generally used for managing large number of activities of a civil engineering project?

- (A) MS Eng (B) MS Project (C) SQL Projects (D) d Base Project

33. A galvanometer(G) measures upto 100 mA current. It is to be converted to a voltmeter to measure upto 100 volts. What is required to be done?

- (A) Add 100 Ω resistance in series with G (B) Add 1000 Ω resistance in series with G
(C) Add 1 Ω resistance in parallel with G (D) Add 0.1 Ω resistance in parallel with G

34. Who authored the book "My Experiments with Truth"?

- (A) Abraham Lincoln (B) Mark Twain (C) Louis Carol (D) M.K Gandhi

35. Raja Ravi Varma was famous for:

- (A) His struggle against the British (B) Music & Singing (C) Paintings (D) Hindu reforms

36. Which of the following is NOT an NGO?

- (A) Amnesty International (B) World Watch (C) PUCL (D) NHRC

37. In C.G.S system, the unit of strain is:

- (A) cm/kg (B) m/kg (C) no unit (D) None of these

38. Which of the following information is NOT contained in engineering drawings?

- (A) Tolerances (B) Material composition
(C) Surface finish (D) All of these are included in engineering drawing

39. El Nino effect is:

- (A) Development of low pressure areas in south east Asian region (B) Reduction in ice caps resulting in variation in insolation absorption
 (C) Prolonged warming in the Pacific Ocean surface area (D) Sustained tornados in the eastern coast of North America

40. In a circuit in which resistance, capacitance and inductance are in series, the impedance would be-

- (A) $\frac{V}{\sqrt{R^2 + (X_L - X_C)^2}}$ (B) $\sqrt{R^2 + (X_L - X_C)^2}$ (C) $i\sqrt{R^2 + (X_L - X_C)^2}$ (D) $\frac{1}{\sqrt{R^2 + (X_L - X_C)^2}}$

41. No Go Ring Gauge will have diameter based on _____ diameter of the component.

- (A) Minimum tolerance diameter (B) Maximum tolerance diameter (C) Nominal diameter (D) Average diameter

42. River Damoder is called the 'Sorrow of _____'.
 (A) Assam (B) Bengal (C) Orissa (D) Uttar Pradesh
43. The linkage of atoms of the same elements into longer chains is called:
 (A) Sublimation (B) Catenation (C) Affiliation (D) Linkage
44. When we switch on an electric bulb or a fan in our house, the appliance starts almost immediately. The drift velocity of electrons in the wires would be close to-
 (A) 1 mm/sec (B) 1 m/sec (C) 3×10^8 m/sec (D) None of these
45. Approximate quantity of CO₂ in the atmosphere in PPM (parts per million) is:
 (A) 2 (B) 20 (C) 200 (D) 400
46. Which of these rocks would have alumina as their main component?
 (A) Siliceous (B) Argillaceous (C) Calcareous (D) Igneous
47. Earthquakes cause damage when-
 (A) Stress exceeds the strain of materials (B) Stress exceeds the strength of materials
 (C) Strain exceeds the strength of materials (D) Strength exceeds the strain of materials
48. English Bond, Flemish Bond, Dutch Bond pertain to-
 (A) Masonry work (B) Cement bonding (C) Bonding between beams (D) Bonding in foundation
49. A software user interface feature that allows the user to view something very similar to the end result while the document is being created is called-
 (A) Format creator (B) Format fidelity (C) WYSIWYG (D) WYGIWYS
50. Government stipulates limit of concentration of sulphur dioxide in ambient air at 50 unit. The unit is:
 (A) g/cc (B) mg/litre (C) mg/m³ (D) $\mu\text{g}/\text{m}^3$
51. Complete the series:
 ab_ab_b_aba_aab
 (A) bbab (B) abaa (C) aaaa (D) aaab
52. A man said to a lady "Rishi's mother is the only child of your father". How is the lady related to Rishi?
 (A) Mother (B) Sister (C) Wife (D) Daughter
53. Loudness of noise is measured in-
 (A) Richter (B) Tesla (C) Decibels (D) Hertz
54. Match the following -
- | | |
|-----------|---|
| 1. Nickel | a. Radiator, Water cooling system |
| 2. Brass | b. Bearings, Gears, Propellers |
| 3. Bronze | c. Hard, Corrosion resistant and used in plating on steel |
- (A) 1-b, 2-a, 3-c (B) 1-a, 2-b, 3-c (C) 1-c, 2-a, 3-b (D) 1-a, 2-c, 3-b
55. An interpretation of the Indian Constitution is based on the spirit of the-
 (A) Fundamental rights (B) Fundamental duties (C) Preamble (D) Directive principles
56. A coin is tossed two times. On both occasions, the result is heads. When the coin is tossed a third time, what is the probability of getting a head?
 (A) 1 (B) $\frac{1}{2}$ (C) $\frac{1}{4} \times \frac{1}{2}$ (D) $\frac{3}{4} \times \frac{1}{2}$

57. Which of these is NOT an Operating System?
 (A) Android (B) iOS (C) Linux ~~(D) Power point~~

58. Consider the following truth table in Boolean Algebra.

X	Y	A	B	C	D
0	0	0	0	1	1
0	1	1	0	0	0
1	0	0	1	1	0
1	1	1	1	0	1

Which of the four options A, B, C, D represent the function

$$F = xy + xy'?$$

- (A) A (B) B (C) C (D) D

59. Sensitive low voltage electronic components are protected from-

- (A) Static charge (B) Induction circuit (C) Lightening ~~(D) All of these~~

60. By what least number should 192,000 be divided so as to become a perfect cube?

- (A) 2 (B) 5 (C) 3 (D) 7

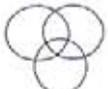
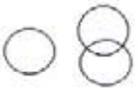
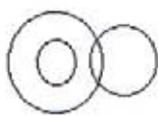
61. Two bulbs are rated 100W, 220 V each. If these bulbs are connected in series to the mains supply, 220 V, the total power consumed by both the bulbs would be-

- (A) 25 Watts (B) 50 Watts (C) 100 Watts ~~(D) 200 Watts~~

62. $\log_4 5 \times \log_5 6 \times \log_6 7$ is equal to:

- (A) $\log\left(\frac{7}{4}\right)$ (B) $\log_4 7$ (C) $\log\left(\frac{4}{7}\right)$ (D) $\log_7 4$

63. Which of the following Venn diagram represents the relationship between Human beings, Educated and Teachers?

- (A)  (B)  (C)  (D) 

64. A merchant is mixing two qualities of rice, one which he procures at ₹ 70/Kg and second at ₹ 40/Kg in the ratio of 7 : 3 respectively. At what price should he sell the mixture to earn a profit of 20%?

- (A) ₹ 73.20/Kg (B) ₹ 74/Kg (C) ₹ 74.6/Kg (D) ₹ 75.4/Kg

65. A tuning fork when sounded together with another tuning fork of known frequency of 240 Hz, emits 2 beats. On loading the tuning fork of known frequency the number of beats heard are one per second. The frequency of the tuning fork is:

- (A) 241 Hz (B) 242 Hz (C) 239 Hz (D) 238 Hz

66. What is the boiling point of water in Kelvin Scale?

- (A) 100 K (B) 273 K (C) 373 K (D) 300 K

67. Find the value of:

$$3 + 0.03 + 0.003 + 0.0003$$

- (A) 12 (B) 3.0333 (C) 3.3333 (D) 6.0333

68. Which of the following tissues transports water and minerals from roots to other parts of the plant?

- (A) Phloem (B) Vessel (C) Sieve tube (D) Xylem

69. A clock is placed on the floor upside down at 9 O'clock. If the minute hand is pointing South East, the hour hand would be pointing-

- (A) North east (B) North west (C) South east (D) South west