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93/2014

Maximum : 100 marks

Time : 1 hour and 15 minutes

1. The mars mission of NASA is known as :
   (A) Voyager
   (B) Endeavour
   (C) Discovery
   (D) Quriosity

2. The constitutional amendment in India which made 'Right to education' a Fundamental right :
   (A) 73
   (B) 21
   (C) 86
   (D) 61

3. Who among the following was the president of the Guruvayur Satyagraha Samithi which led the Guruvayur Satyagraha of 1931?
   (A) K.Kelappan
   (B) C. Kesavan
   (C) K.P. Kesava menon
   (D) Mannath Padmanabhan

4. Ronjan Sodhi who received Rajiv Gandhi Khel Ratna Award for 2012-13 is associated with which of the following games :
   (A) Shooting
   (B) Hockey
   (C) Weight lifting
   (D) Billiards

5. Which of the following companies was given the title Maharatna by Government of India in 2013?
   (A) VISL
   (B) BHEL
   (C) Steel Authority of India
   (D) FACT

6. Doldrums are :
   (A) Sub polar low pressure areas
   (B) Equatorial zone with low pressure
   (C) High pressure areas near poles
   (D) Low pressure areas near the poles

7. Which of the following countries hoists the World Cup Hockey tournament in 2014?
   (A) Japan
   (B) Newzealand
   (C) Netherland
   (D) Switzerland

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8. Which of the following vitamins is built in human body?
   (A) Vitamin D (B) Vitamin B
   (C) Vitamin C (D) Vitamin A

9. Bhagat singh was hanged in association with which of the following cases?
   (A) Lahore conspiracy case (B) Alipur Bomb case
   (C) Kakkori case (D) Nasik conspiracy case

10. The first news paper in Malayalam language 'Rajyasamacharam' was brought out by :
   (A) Benjamin Baily (B) Arnos Pathiri
   (C) Herman Gundert (D) G.P. Pillai

11. Which among the following was not an internet search engine?
   (A) Google (B) BARK
   (C) M.S.N (D) Altavista

12. 'Vayalar Garjikkunnu' is the poem written by :
   (A) Changampuzha (B) P. Kunhiraman Nair
   (C) P. Bhaskaran (D) Vayalar Ramavarma

13. The author of the Book 'Animal Farm' is :
   (A) George Orvell (B) T.S. Elliot
   (C) Alber Kamu (D) Earnest Hemingway

14. Which among the following is not a work by Sri Narayana Guru?
   (A) Daivadasakam (B) Darsanamala
   (C) Janani Navaratnamanjari (D) Atmavidya

15. The lowest velocity required for an object to overcome the gravitational force of the earth :
   (A) 11.2 km/s (B) 32 km/s
   (C) 8 km/s (D) 6.8 km/s

16. Which among the following is the famous painting by Pablo Piccaso?
   (A) The third of May (B) Guernica
   (C) After the sermon (D) Descent from the cross

17. The poem Jathikkummi is written by which of the following Renaissance leaders of Kerala :
   (A) Kumaranasan (B) Sreenarayana Guru
   (C) Pandit K.P. Karuppan (D) Vallathol

18. The coal field in Orissa which Kerala lost in 2013 is :

(A) Doulat Beg (B) Baitharani

(C) Inchiyon (D) Ulanbathor

19. Who among the following wrote the book 'Saving Capitalism from Capitalists' along with Luigi Zingales?

(A) Amartya Sen (B) Uma Kapila

(C) Dr. K.N. Raj (D) Raghuram G. Rajan

20. The cultural organisation known as 'Vidyaposhini' was oraganised by which of the following renaissance leaders of Kerala :

(A) Ayyankali (B) Vagbhatanandan

(C) Dr. Palpu (D) Sahodaran Ayyappan

21. What will be the equivalent resistance when two resistors 2Ω and 2kΩ are connected parallel to each other?

(A) 4 kΩ (B) 1.998 Ω

(C) 4 Ω (D) 1.998 kΩ

22. Consider elastic collision between two spheres A and B of equal masses. Let initially A travels at a speed 2m/s and B at rest then after collision speed of A becomes :

(A) 1.5 m/s (B) 1.2 m/s

(C) 0 m/s (D) 1.35 m/s

23. One horse power is equivalent to :

(A) 1000 W (B) 764 W

(C) 1024 W (D) 746 W

24. Which of the following gates is known as universal gate?

(A) OR (B) NAND

(C) AND (D) NOT

25. Most powerful rays in electromagnetic spectrum :

(A) γ rays (B) IR rays

(C) X rays (D) UV rays

26. When light ray travels from one medium to another which of the following parameter does not change?

(A) Wavelength (B) Frequency

(C) Velocity (D) Refractive index of medium

27. Kirchhoff's second law for an electrical circuit refers to :

(A) Power (B) Current

(C) Voltage (D) Energy

28. Principle behind the functioning of optical fiber is :

(A) FWHM (B) USB

(C) PWM (D) TIR

29. Choose the relation between electric field and potential from the following :

(A) V = Ed (B) E = Vd

(C) V = E/d (D) None of the above

30. Which of the following mirrors are used as rear view mirrors?

(A) Plane mirror (B) Concave mirror

(C) Plane concave mirror (D) Convex mirror

31. The symbol of the element Potassium is :

(A) P (B) K

(C) Po (D) Na

32. Which of the following statement is true for an Acid?

(A) Acid turns red litmus blue

(B) Acid has bitter taste

(C) Acid turns blue litmus red

(D) Acid produces hydroxide ions when dissolved in water

33. The oxidation number of Manganese in Potassium permanganate is :

(A) +1 (B) +4

(C) 0 (D) +7

34. Which of the following compound cause temporary hardness of water?

(A) Calcium Chloride (B) Magnesium Carbonate

(C) Magnesium Bicarbonate (D) Calcium Sulphate

35. The process of decomposition of an electrolyte when electric current is passed through them is called :

(A) Electrolysis
(B) Electroplating
(C) Galvanization
(D) Oxidation reaction

36. The Lead acid accumulator (Lead acid battery) is an example of :

(A) Dry cell
(B) Fuel cell
(C) Primary cell
(D) Secondary cell

37. The Self linking property of Carbon atoms in organic compound is called :

(A) Catenation
(B) Isomerism
(C) Allotropy
(D) Isotope

38. Teflon is a polymer of :

(A) Vinyl cyanide
(B) Ethylene fluoride
(C) Caprolactum
(D) Tetra fluroethylene

39. The major components of the fuel Water gas is :

(A) Butane and Propane
(B) Methane and air
(C) Carbon monoxide and Hydrogen
(D) n-butane and Propane

40. Energy is produced in nuclear reactor by :

(A) Nuclear fusion reaction
(B) Nuclear fission reaction
(C) Nuclear fusion and Nuclear fission reaction
(D) Burning Naphtha

41. Which one is the statement that not applicable for laws of static friction?

(A) The force of friction always acts in a direction, opposite to that in which the body is moving
(B) The magnitude of the force of friction is exactly equal to the force, which tends to move the body
(C) The force of friction is independent of the area of contact between the two surfaces
(D) The force of friction depend upon the roughness of the surfaces

42. A car starts from rest and moves with a constant acceleration of 'a' meter/second^2. What is its velocity 'v' after it has travelled for 's' meters?

(A) $v = u^2 + 2as$ (B) $v^2 = u^2 - 2as$

(C) $v^2 = u^2 + 2as$ (D) $v = u^2 - 2as$

43. A bike starting from rest is accelerated at the rate of 0.5 m/s^2. Find the distance covered by the bike in 30 seconds :

(A) 250 m (B) 275 m

(C) 200 m (D) 225 m

44. The moment of inertia of a rectangular section of width (b) and depth (d) about an axis passing through its C.G and parallel to x-x-axis is given by the relation :

(A) $db^3/12$ (B) $bd^3/12$

(C) $db^3/24$ (D) $bd^3/36$

45. The BM at simply supported beam with a point load at its midpoint is :

(A) wl/4 (B) $wl^2/4$

(C) wl/2 (D) $wl^2/2$

46. If the wall section thickness (t) and material constant (n) is given, the gate depth (h) has been found by the relation :

(A) $h = t/n$ (B) $h = n/t$

(C) $h = nt$ (D) $h = n/t^2$

47. The unit of kinematic viscosity is :

(A) m^3/s (B) m^2/s

(C) m/s^2 (D) m/s

48. The fluid pressure can be measured by an instrument called :

(A) Pressure gauge (B) Venturi meter

(C) Manometer (D) Energy meter

49. The measure of the fluid's internal resistance offered to flow is :

(A) Specific gravity (B) Lubricity

(C) Compressibility (D) Viscosity

50. Give an example for positive displacement pump :

(A) Piston pump (B) Jet pump

(C) Centrifugal pump (D) Propeller pump

51. Name the device capable of converting a direct current into a high frequency alternating current :

(A) Transformer (B) Converter

(C) Diode (D) Oscillator

52. Give an example of material used for semiconductors :

(A) Copper (B) Aluminium

(C) Silicon (D) Steel

53. Name the user friendly digital electronic device/Electronic computer :

(A) PLC (B) CPU

(C) DPU (D) Microprocessor

54. The non-conventional sources of energy used for engineering power is :

(A) Thermal power (B) Hydro power

(C) Wind power (D) Nuclear power

55. What is the capacity of Idukki Hydel project?

(A) 780 MW (B) 1200 MW

(C) 600 MW (D) 1156 MW

56. What is the unit of Radioactivity?

(A) Newton (B) Mega watt

(C) Curie (D) Coulomb

57. Approximate percentage of energy saved by a CFL compared to ordinary incandescent bulb :

(A) 50% (B) 75%

(C) 90% (D) Below 50%

58. Which one is the part of Nuclear Reactor?

(A) Reservoir (B) IC Engine

(C) Moderator (D) Trash rack

76. Down milling is the process of removing the metal by a cutter which is rotated :

(A) In the same direction of travel of the work piece

(B) Against the travel of the work piece

(C) Parallel to the axis of rotation of the cutter

(D) Perpendicular to the axis of rotation of the cutter

77. An operation of enlarging a hole through a certain distance from one end, instead of enlarging the whole drilled surface is :

(A) Counter sinking (B) Under cutting

(C) Counter boring (D) Engraving

78. Which one is not the element of a single point cutting tool?

(A) Shank (B) Lip angle

(C) Rake (D) Fillet

79. The welding method which is used for joining thin metal sheets :

(A) Arc welding (B) Gas welding

(C) Resistance welding (D) Hydrogen welding

80. Name the standard component used for making a press tool :

(A) Guide bush (B) Dowel pin

(C) Pilots (D) Stripper

81. The material used for making punch and die is :

(A) M.S (B) C.I

(C) S.S (D) HCHCR.S

82. The operation by which cutting a sheet metal through part of its length and then bending the cut is called :

(A) Slitting (B) Lancing

(C) Curling (D) Notching

83. The space between the mould parts, when the mould is open is called :

(A) Cavity space (B) Ejection gap

(C) Inter space (D) Day Light

84. A channel or orifice connecting the runner to the impression is said to be :

(A) Gate (B) Cavity

(C) Insert (D) Side core

85. The instrument used to obtain an enlarged tracing of the surface irregularities is known as :

(A) Interferometer (B) Profilometer

(C) Comparator (D) Surface meter

86. A steel plate situated between the core and cavity plate in a multi-part design for the purpose of ejection is :

(A) Knock out (B) Ejector

(C) Spacing pad (D) Stripper plate

87. A body in space having that how many number of degrees of freedom :

(A) 6 (B) 12

(C) 3 (D) 9

88. Cutting tools like drills, reamers and counter boring cutters are located and guided by :

(A) Buttons (B) Clamps

(C) Jig bushes (D) Locators

89. Which one is used to hold and locate the work piece during machining operation?

(A) Fixtures (B) Clamping devices

(C) Jigs (D) Bolts and nuts

90. Give the name of device which supports lengthy work piece on a centre Lathe :

(A) Mandrels (B) Chucks

(C) Steady rest (D) Turning fixture

91. Name the forging operation to increase the cross sectional area :

(A) Enlarging (B) Upsetting

(C) Calendaring (D) Swaging

92. For blanking operation, where 'S' is the size of the work piece and 'C' is the clearance, the punch size can be calculated by the relation :

(A) S + 2C (B) S + 4C

(C) S – 4C (D) S – 2C

93. What is the angular clearance provided on die, that which cut out piece clears the die easily?

(A) 0.5° to 2° (B) 2.5° to 4°

(C) Above 4° (D) Less than 0.5°

94. The male portion of a mould which forms the internal shape of the moulding is :

(A) Cam (B) Core

(C) Sprue (D) Insert

95. Combine two cutting operation in a single stage press tool is called :

(A) Progressive tool (B) Combination tool

(C) Gang tool (D) Compound tool

96. The entire bend length of work piece does not come in contact with punch or die is :

(A) Straight bending (B) Contact bending

(C) Air bending (D) Bottoming

97. The process of making cup shaped parts from sheet metal blank pulling into dies with the help of punch is called :

(A) Drawing (B) Spinning

(C) Extrusion (D) Forming

98. Where the surface area of cavity (A) in mm^2 and material constant (n) is given, the gate width (w) can be calculated by the relation?

(A) $w = n\sqrt{A}/30$ (B) $w = n\sqrt{A}/60$

(C) $w = n\sqrt{A} \times 60$ (D) $w = \left(n/\sqrt{A}\right) \times 30$

99. Who is known as the Father of scientific management?

(A) Henry Fayol (B) F.W. Taylor

(C) R.H Rowan (D) Abraham Harold Maslow

100. Which is the management technique suitable for planning, monitoring and controlling the projects?

(A) Critical Path Method (B) SWOT

(C) TQM (D) PERT