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# **KPSC Tradesman**

**Previous Year Paper  
Chemical Engineering  
22 Mar, 2015**



96/2015

Maximum : 100 marks

Time : 1 hour and 15 minutes

- Which indicator is used in weak acid against Strong alkali titrations?  
(A) Methyl Orange (B) Both (A) and (D)  
(C) Starch (D) Phenolphthalein
- What is the equivalent weight of Sodium Hydroxide?  
(A) 40 (B) 63  
(C) 56 (D) 53
- What is the full form of EDTA used for the hardness estimation?  
(A) Ethylene di nitro tetra amine  
(B) Ethyl dichloro tetra acetate  
(C) Ethylene di amine tetra acetic acid  
(D) Ethyl di amine tetra alcohol
- Temporary Hardness is removed by :  
(A) Filtration (B) Boiling  
(C) Cooling (D) Decantation
- The lowest temperature at which enough vapour of the oil, when mixed with air will ignite but not continue to burn :  
(A) Fire point (B) Pour point  
(C) Flash point (D) Cloud point
- Normality of a solution is defined as :  
(A) Gram moles per millilitre (B) Gram moles per litre  
(C) Gram equivalents per millilitre (D) Gram equivalents per litre
- Which of the following is a unit of alkalinity of water?  
(A) Grams per millilitre (B) Kilograms per litre  
(C) Parts per million (D) Volume per million

A

3

[P.T.O.]

8. Which of the following is defined as the number of moles of solute per kilogram of solvent?
- (A) Normality (B) Molality  
(C) Molarity (D) Mole ratio
9. Which chemical is known as caustic soda?
- (A) Sodium carbonate (B) Sodium acetate  
(C) Sodium hydroxide (D) Sodium bicarbonate
10. Which of the following is a by-product of soap industry?
- (A) Shampoo (B) Oil  
(C) Glycerol (D) Glycol
11. Which type of pencil is specified to draw the outlines of visible lines in Engineering Graphics?
- (A) H (B) B  
(C) HB (D) 2B
12. What is the area of A2 drawing sheet in square millimetre?
- (A)  $841 \times 1189$  (B)  $594 \times 841$   
(C)  $297 \times 420$  (D)  $420 \times 594$
13. The longest diameter of ellipse is :
- (A) Minor axis (B) Major axis  
(C) Conjugate diameter (D) Focal diameter
14. In first angle projection, Top view is always :
- (A) Below x-y line (B) Above x-y line  
(C) On x-y line (D) None of the above
15. Which of the following is an emulsifying agent?
- (A) Glycerine (B) Soap  
(C) Wax (D) Alcohol
16. What is the pH of a neutral solution?
- (A) 7 (B) 8  
(C) 5 (D) 9

17. Which of the following is not a fossil fuel?
- (A) Coal (B) Lignite  
(C) Crude oil (D) Uranium
18. What is the weight of the rider in a fractional weight box?
- (A) 30 mg (B) 20 mg  
(C) 10 mg (D) 40 mg
19. Which of the following is a soft soap?
- (A) Sodium salt of higher fatty acids  
(B) Potassium salt of higher fatty acids  
(C) Calcium salt of higher fatty acid  
(D) Both (A) and (B)
20. Which of the following is known as laughing gas?
- (A) Nitrous oxide (B) Nitric oxide  
(C) Nitrogen (D) Ammonia
21. What is the chemical name of common salt?
- (A) Sodium carbonate (B) Potassium carbonate  
(C) Sodium chloride (D) Potassium chloride
22. Expand term MSDS used in safety
- (A) Material Safety Data Sheet (B) Material Safety Direction Sheet  
(C) Material Safety Data System (D) Material Safety Direction System
23. Which of the following is not in the triangle of components for the cause of fire?
- (A) Air (B) Fuel  
(C) Temperature (D) Pressure
24. A Fire is :
- (A) Rapid oxidation (B) Rapid reduction  
(C) Slow oxidation (D) Slow reduction
25. A substance that can act as a proton donor in aqueous solution is :
- (A) Solvent (B) Base  
(C) Salt (D) Acid

26. What is the external indicator used in dichrometric titrations for the estimation of iron (II) compounds?
- (A) Eriochrome black T (B) Methyl orange  
(C) Thymol blue (D) Ferroin
27. What is the percentage composition of the Nitrogen in atmosphere?
- (A) 70 (B) 78  
(C) 21 (D) 0.9
28. What is the white coloured precipitate formed during the gravimetric estimation of Sulphate?
- (A) Barium sulphate (B) Calcium sulphate  
(C) Sodium sulphate (D) Potassium sulphate
29. Which of the following is not a method of separation?
- (A) Chromatography (B) Distillation  
(C) Crystallisation (D) Spectrometry
30. Turbidity of water is measured using
- (A) Colourimeter (B) Photometer  
(C) Calorimeter (D) Nephelometer
31. The law states that the emissive power of a black body is directly proportional to fourth power of its absolute temperature.
- (A) Stefan-Boltzman law (B) Wien's law  
(C) Kirchhoff's law (D) Fourier's law
32. Which of the following is a green house gas?
- (A) Nitrogen (B) Oxygen  
(C) Argon (D) Carbon dioxide
33. Viscosity of a liquid decreases when the temperature
- (A) Increases (B) Decreases  
(C) Remains constant (D) Both (A) and (B)
34. Which of the following type of pump requires priming?
- (A) Reciprocating pump (B) Centrifugal pump  
(C) Gear pump (D) Diaphragm pump

35. At constant temperature, volume of a gas decreases when its pressure :
- (A) Increases (B) Decreases  
(C) Remains constant (D) None of the above
36. Pipelines of different liquids and gases are identified by :
- (A) Diameter (B) Altitude  
(C) Thickness (D) Colour code
37. pH of N/1000 hydrochloric acid solution is
- (A) 2 (B) 3  
(C) 4 (D) 5
38. Which of the following is a manometric liquid?
- (A) Naphtha (B) Oil  
(C) Nitro benzene (D) Mercury
39. LNG is
- (A) Liquefied Natural Gas (B) Liquefied Nitrogen Gas  
(C) Liquefied Neutral Gas (D) None of the above
40. Which of the following is not a fire extinguisher?
- (A) Water (B) Carbon dioxide  
(C) Air (D) Foam
41. Which of the following is not an inflammable substance?
- (A) Nitrogen (B) Carbon tetra chloride  
(C) Liquefied Petroleum gas (D) Hydrogen
42. Cleaning action of the soap is due to :
- (A) Sodium ions present in the soap  
(B) Fatty acid present in the soap  
(C) Increasing the surface tension of water  
(D) Lowering of surface tension of water

43. 98% of Sulphuric acid is manufactured in Contact process is by absorbing Sulphur trioxide in :
- (A) Water (B) Con. Sulphuric acid  
(C) Con. Hydrochloric acid (D) None of the above
44. When the value of the Reynolds Number is over 4000, then the flow will be always :
- (A) Laminar (B) Viscous  
(C) Turbulent (D) None of these
45. Which of the following is a variable area meter?
- (A) Orifice meter (B) Venturi meter  
(C) V notch (D) Rotameter
46. Chemical name of Alum :
- (A) Aluminium oxide  
(B) Ammonium Aluminium Oxide  
(C) Potassium aluminium sulphate dodecahydrate  
(D) Ferric Aluminium Oxide
47. In a heat exchanger, if the two fluids enter at the same end of the exchanger and flow in the same direction to the other end is called :
- (A) Counter current flow (B) Parallel flow  
(C) Cross flow (D) Laminar flow
48. The Minimum dissolved oxygen required for the aquatic life is :
- (A) 4 ppm (B) 1 ppm  
(C) 7 ppm (D) 10 ppm
49. The amount of Oxygen required by bacteria for stabilizing decomposable organic matter in water under aerobic condition is known as :
- (A) COD (B) BOD  
(C) DO (D) Both (A) and (B)

50. Iodine value of an oil measures :
- (A) The amount of NaOH required for complete saponification
  - (B) The length of the carbon chain of the fatty acids
  - (C) Degree of Unsaturation
  - (D) Degree of Saturation
51. Bronze is an alloy of :
- (A) Copper and iron
  - (B) Copper and zinc
  - (C) Copper, zinc and Tin
  - (D) Copper and Tin
52. Iodine Mono chloride dissolved in Acetic acid is :
- (A) Freon
  - (B) Acetate Buffer
  - (C) Wijs' solution
  - (D) Iodine solution
53. Catalyst used in the Contact process to oxidise sulphur dioxide to sulphur trioxide is :
- (A) Ferric oxide
  - (B) Vanadium Pentoxide
  - (C) Zinc Oxide
  - (D) Platinum
54. What is the unit of force in SI system?
- (A) Ampere
  - (B) Joules
  - (C) Newton
  - (D) Watt
55. Name the process of giving iron with a thin coating of zinc to prevent rusting
- (A) Hot dipping
  - (B) Galvanising
  - (C) Painting
  - (D) Electroplating
56. Which catalyst is used in hydrogenation of oil?
- (A) Nickel
  - (B) Ferric Oxide
  - (C) Phosphoric acid
  - (D) Platinum
57. Which of the following manufacturing process is an example of autocatalysis?
- (A) Sulphuric acid manufacture
  - (B) Ammonia manufacture
  - (C) Phosphoric acid manufacture
  - (D) Sugar manufacture

58. Which of the following is not a chemical fertiliser?
- (A) Diammonium phosphate (B) Calcium phosphate  
(C) Ammonium sulphate (D) None of the above
59. The type of material which becomes soft when heated and hard when cooled :
- (A) Thermo plastic (B) Thermo setting plastics  
(C) Amino plastics (D) Thermo static
60. Which of the following is not a semi drying oil?
- (A) Corn Oil (B) Cotton seed Oil  
(C) Coconut Oil (D) Sesame Oil
61. The calorific value of Gaseous fuel is usually measured using :
- (A) Bomb calorimeter (B) Junker's Calorimeter  
(C) U tube viscometer (D) None of the above
62. Which of the following is a cause for acid rain?
- (A) Water pollution (B) Soil pollution  
(C) Air pollution (D) Ozone layer depletion
63. The fibrous matter that remains after sugarcane stalks are crushed to extract their juice is :
- (A) Sorghum (B) Bagasse  
(C) Lignin (D) Pulp
64. The property of metals which allows them to be drawn into thin wires beyond their elastic limit without rupture is called :
- (A) Ductibility (B) Malleability  
(C) Elasticity (D) Hardness
65. The breaking stress of a wire depends upon :
- (A) Length of wire (B) Radius of wire  
(C) Shape of cross section (D) Material of wire
66. If the weight of the body is just equal to the upward thrust :
- (A) The body will remain suspended completely in the liquid  
(B) The body will sink  
(C) The body will be completely outside the liquid  
(D) The body will be partly outside and partly inside the liquid

67. If ice melts under gravity free conditions in vacuum, the final geometrical shape will be :
- (A) Straight (B) Spherical  
(C) Cubical (D) Circular
68. Which one of the following filters is entirely automatic in action?
- (A) Leaf filter (B) Plate and Frame filter press  
(C) Rotary drum filter (D) Moore filter
69. Which of the following is a vector quantity?
- (A) Electric current (B) Strain  
(C) Specific gravity (D) Speed
70. The distance travelled is given by :
- (A) Area under speed – time graph (B) Area under distance – time graph  
(C) Slope of velocity – time graph (D) Slope of distance – time graph
71. Which machine is used for grinding materials such as coal pigments and feldspar for pottery?
- (A) Revolving mill (B) Ball mill  
(C) Hammer mill (D) Gyratory crusher
72. The sedimentation operations may be carried out batch wise or continuously in equipment called :
- (A) Filter press (B) Chamber press  
(C) Rotary drum filter (D) Thickener
73. Which of the following not a Newtonian fluid?
- (A) Glycerine (B) Hexane  
(C) Tooth paste (D) Alcohol
74. Which manometer is used for the measurement of small pressure difference?
- (A) Differential manometer (B) Inclined manometer  
(C) U tube manometer (D) None of these
75. Which of the following device is used to measure local or point velocity by measuring the difference between the impact and the static pressure?
- (A) Orifice meter (B) Venturimeter  
(C) Pitot tube (D) Rotameter

76. Which type of valves are used for viscous liquids, slurries or corrosive liquids?
- (A) Plug valve (B) Diaphragm valve  
(C) Butterfly valve (D) Globe valve
77. A propeller is an :
- (A) Axial flow, low speed impeller (B) Radial flow, high speed impeller  
(C) Radial flow, low speed impeller (D) Axial flow high speed impeller
78. Fourdrinier machine is used in the manufacture of :
- (A) Sugar (B) Paper  
(C) Alcohol from molasses (D) Phenol formaldehyde
79. Hardened steel is softened by :
- (A) Normalising (B) Annealing  
(C) Carburising (D) Tempering
80. Water purification technology that uses a semi permeable membrane to remove larger particles from drinking water is :
- (A) Chromatography (B) Filtration  
(C) Reverse osmosis (D) Demineralisation
81. The founder of Indian National Congress :
- (A) Annie Besant (B) A.O. Hume  
(C) Lord Dufferin (D) W.C. Bannerji
82. Dandi march of 1930 is connected with the :
- (A) Non-Co-operation Movement (B) Quit India Movement  
(C) Civil Disobedience Movement (D) Champaran Sathyagraha
83. Who declared "Swaraj is my birthright and I shall have it"?
- (A) Tilak (B) Gokhale  
(C) Bhagat Sing (D) S.N. Bannerji
84. Author of the book 'An Enquiry into the nature and causes of Wealth of Nations' :
- (A) J.M. Keynes (B) Alfred Marshall  
(C) Lionel Robbins (D) Adam Smith

85. Which year the first Five Year plan started in India?  
(A) 1947 (B) 1951  
(C) 1950 (D) 1948
86. Who exhorted for 'Total Revolution'?  
(A) R.K. Narayan (B) K.R. Narayanan  
(C) Jayaprakash Narayan (D) K. Kamraj
87. Which commission was entrusted to enquire the atrocities, corruption and the misuse of power in connection with the Emergency declared in 1975?  
(A) Sha Commission (B) Belvant Rai Commission  
(C) Mandal Commission (D) Babu Paul Commission
88. GPS means :  
(A) Government Position System (B) Global Poison System  
(C) Global Positioning System (D) Global Polar System
89. 'Red River' in India is :  
(A) Sindhu (B) Ganga  
(C) Krishna (D) Brahmaputhra
90. Tributary of Kaveri is :  
(A) Indravati (B) Kabani  
(C) Sutlej (D) Thungabhadra
91. Who founded 'Sadhujana Paripalana Sangham'?  
(A) Ayyavu Swamikal (B) V.T. Bhattathiripad  
(C) Kumaranasan (D) Ayyankali
92. Who was called by his pet name 'Kunjan' by all and later known as 'Kunjan Pillai'?  
(A) Chattampi Swamikal (B) Vagbhatanandan  
(C) Brahmananda Sivayogi (D) Vaikunda Swamikal
93. Who introduced the system "A School along with every Church"?  
(A) Thomas (B) Kuriakose Elias Chavara  
(C) St. Alphonsa (D) Mathew Kavukkattu

94. Who raised the slogan "No Caste, No Religion and No God for Human Beings"?
- (A) Sree Narayana Guru (B) Pandit Karuppan  
(C) Natarajaguru (D) Sahodaran Ayyappan
95. SNDP Yogam came into existence in :
- (A) 1903 (B) 1909  
(C) 1913 (D) 1914
96. The present Finance Minister of India :
- (A) Smriti Irani (B) Umabharathi  
(C) Venkayya Naidu (D) Arun Jaitley
97. District headquarters of Wayanad :
- (A) Mananthavady (B) Kalpetta  
(C) Pulpally (D) Sulthan Bathery
98. The Pen name of P.C. Kuttikrishnan :
- (A) Sanjayan (B) Pamman  
(C) Kesari (D) Uroob
99. "Straight from the Heart" is the autobiography of :
- (A) Sachin Tendulkar (B) Sunil Gavaskar  
(C) Kapil Dev (D) Rahul Dravid
100. The First Butterfly safari park in Asia :
- (A) Thenmala (B) Silent Valley  
(C) Munnar (D) Nelliampathi