

170/2016

Maximum : 100 marks

Time : 1 hour and 15 minutes

1. Vaikam Sathyagraha was started at the time of :
(A) Sree Moolam Thirunal (B) Swathi Thirunal
(C) Visakhram Thirunal (D) Rani Lakshmi Bai
2. Who was known as "Kerala Valmeeki"?
(A) C.V. Raman Pillai (B) Kumaranasan
(C) N. Krishna Pillai (D) Vallathol
3. "Ethu Bhoomiyanu" was the famous Drama written by :
(A) K. Damodaran (B) V.T. Bhattathirippadu
(C) K.T. Muhammad (D) Premji
4. The Constitution of India was adopted on :
(A) January 26; 1950 (B) November 26; 1949
(C) August 15; 1947 (D) January 26; 1949
5. Who was the first lady Magistrate of India?
(A) Anna Chandi (B) Sujatha Manohar
(C) Omana Kunjamma (D) K.K. Usha
6. World Aids Day is on :
(A) Dec. 1 (B) Nov. 1
(C) Dec. 30 (D) Nov. 30
7. Founder of Sadhujana Paripalana Sangam :
(A) Vaybhadananda (B) Sree Narayana Guru
(C) Velukkutty Arayan (D) Ayyankali
8. Rajaji National Park is situated at :
(A) Gujarat (B) Utharakhandu
(C) Orissa (D) Assam

9. Kerala Sangeetha Nadaka Akkadami is situated at :
- (A) Thrissur (B) Ernakulam
(C) Kottayam (D) Thiruvananthapuram
10. The Smallest Taluk in Kerala :
- (A) Eranadu (B) Kunnathur
(C) Kochi (D) Alappuzha
11. If A and B are any two nonsingular matrices of the same order, then $(AB)^{-1} =$:
- (A) $B^{-1}A^{-1}$ (B) $A^{-1}B^{-1}$
(C) 0 (D) 1
12. Solutions of the system of equations $x + y + z = 9$, $2x + 5y + 7z = 52$, $2x + y - z = 0$ is :
- (A) $x = 1, y = 3, z = 4$ (B) $x = -1, y = 4, z = 4$
(C) $x = -1, y = 5, z = 5$ (D) $x = 1, y = 3, z = 5$
13. The term independent of x in the expansion of $\left(x^2 - \frac{1}{x}\right)^9$ is :
- (A) 74 (B) 94
(C) 84 (D) 64
14. $(\sec A + \tan A)(1 - \sin A) =$:
- (A) $\sin A$ (B) $\cos A$
(C) $\tan A$ (D) $\sec A$
15. If a line makes angles A, B, C with the axes, then $\sin^2 A + \sin^2 B + \sin^2 C =$:
- (A) 1 (B) 2
(C) 3 (D) 4
16. If $x^2 + y^2 = 3xy + 5$, then $\frac{dy}{dx} =$
- (A) $\frac{2x - 3y}{3x + 2y}$ (B) $\frac{3x + 2y}{2x + 3y}$
(C) $\frac{2y - 3x}{3y - 2x}$ (D) $\frac{3y - 2x}{2y - 3x}$

17. The equation of the tangent to the curve $x^2 + 3y = 3$ which is parallel to the line $y - 4x + 5 = 0$ is :
- (A) $4x - y + 13 = 0$ (B) $5x + 2y + 6 = 0$
 (C) $x + 3y = 3$ (D) $2x - 3y + 6 = 0$
18. $\int \frac{(\log x)^2}{x} dx = :$
- (A) $x(\log x)^2 + C$
 (B) $\frac{(\log x)^3}{3} + C$
 (C) 1
 (D) Not defined (C used in the choices is constant of integration)
19. The area included between the curve $ay^2 = x^3$, the X-axis and the ordinate $x = a$ is :
- (A) $\frac{2a^2}{5}$ (B) $\frac{2a^3}{7}$
 (C) $\frac{3a^2}{2}$ (D) 1
20. Solution of the differential equation $\frac{dy}{dx} = x + y + xy + 1$ is :
- (A) $\frac{x^2}{2} + \frac{y^2}{2} + \frac{xy^2}{2} + xy + C$
 (B) $\frac{x^2}{2} + \frac{y^2}{2} = C$
 (C) $\log(y+1) = \frac{x^2}{2} + x + C$
 (D) Solution does not exist (C used in the choices is constant of integration)
21. In chain surveying at what circumstances ranging is done?
- (A) when the stations are intervisible
 (B) when the length of the survey line is more than the chain length
 (C) to set out the foot of a perpendicular from a point outside the survey line
 (D) when the ranging rods are not available

22. A dumpy level is set up between stations A and B. Staff is held at A whose reduced level is 100.000 and Back Sight is noted as 1.100, then Fore Sight is noted as 1.000 after holding the staff at B. What is the reduced level of B?
- (A) 100.100 (B) 101.000
(C) 99.900 (D) 101.100
23. Which of the following types of bond contains, alternate courses of headers and stretchers as the main feature?
- (A) Flemish Bond (B) Stretcher Bond
(C) English Bond (D) Header Bond
24. What is meant by batching of concrete?
- (A) Process of measuring the required quantities of cement, fine aggregate, coarse aggregate and water
(B) Process of determining the required proportions of cement, fine aggregate, coarse aggregate and water for a particular mix.
(C) Process of mixing the required quantities of cement, fine aggregate, coarse aggregate and water for a particular mix
(D) Process of separating the different types of concrete into different batches
25. Which among the following is not a structural steel section?
- (A) Channel section (B) Angle section
(C) T - section (D) Tor steel
26. In a two stroke engine, the working cycle is completed by _____ revolution of the crankshaft.
- (A) two (B) one
(C) three (D) four
27. The fuel injector used in :
- (A) diesel engine (B) gas engine
(C) petrol engine (D) steam engine
28. The clutch is located between the engine and :
- (A) gear box (B) universal joint
(C) rear axle (D) differential

29. Uranium is used as a primary fuel in _____ power plant.
- (A) Steam (B) Hydroelectric
(C) Diesel (D) Nuclear
30. In an automobile transmission system the drive from gear box to the rear axle is taken by :
- (A) Clutch (B) Universal joint
(C) Propeller shaft (D) Differential
31. A 4-ohm resistor is connected across a 12 V battery. The current flowing will be :
- (A) 4 A (B) 6 A
(C) 3 A (D) 2 A
32. A series RL circuit is connected to a 100 V 50 Hz supply. The resulting current is 10 A and power consumed is 500 W. The power factor of the circuit is :
- (A) 0.5 lag (B) 0.5 lead
(C) unity (D) zero
33. Earthing of electric installations are done using :
- (A) Insulated Copper wire
(B) Bare Aluminium wire
(C) Insulated aluminium wire
(D) Bare Copper Conductor
34. A 3-ohm resistor is connected in parallel to 6-ohm resistor. The combination is connected in series to an 8-ohm resistor. A 10-ohm resistor is connected in parallel to the whole combination. The effective resistance is
- (A) 10 ohms (B) 5 ohms
(C) 26 ohms (D) 20 ohms
35. A 10 ohm resistor is connected across a 20 V battery. Power consumed is :
- (A) 400 W (B) 200 W
(C) 80 W (D) 40 W

36. All CDMA based technologies have _____ handovers.
(A) hard (B) soft
(C) softer (D) none of above
37. What is the toxic substance contained by typical electronic waste?
(A) PCBs (B) dioxin
(C) pesticides like compounds (D) heavy metals
38. How are microcontrollers classified on the basic of internal bus width?
(A) 8, 16, 32, 64 bits (B) 4, 8, 16, 32 bits
(C) 8, 16 bits (D) 4, 16, 32 bits
39. For a full wave rectified sine wave, mean value is :
(A) $0.70 i_m$ (B) $0.636 i_m$
(C) $0.5 i_m$ (D) $0.318 I_m$
40. System on chip means :
(A) It consist of both analog and digital IC
(B) only analog IC
(C) only digital IC
(D) none of above
41. The rocks formed due to consolidation of weathered particles of the existing rocks are called :
(A) Sedimentary rocks (B) Igneous rocks
(C) Metamorphic rocks (D) Stratified rocks
42. In brick masonry the frog of the brick is generally kept on :
(A) Top face (B) Bottom face
(C) Exposed face (D) Interior face
43. First class bricks should not absorb water more than :
(A) 20% (B) 22%
(C) 25% (D) 15%
44. The innermost part of the stem, which consists entirely of cellular tissues, is called :
(A) Heart (B) Bark
(C) Cambium (D) Sap wood

45. Pulverizing clinkers and mixing _____ results in the material called cement.
- (A) Gypsum (B) Limestone
(C) Clay (D) Silica
46. The exposed vertical surfaces perpendicular to window or door frame are called :
- (A) Sill (B) Jamb
(C) Reveals (D) Cornice
47. The treatment of joints in masonry construction is called :
- (A) Plastering (B) Pointing
(C) Painting (D) None of the above
48. The under surface of a stair is called :
- (A) Head room (B) Scotia
(C) Soffit (D) None of the above
49. The operation of providing new permanent foundations is called :
- (A) Shoring (B) Scaffolding
(C) Under pinning (D) None of the above
50. Plastics can be broadly classified as :
- (A) Monomers and polymers
(B) Thermosetting and thermoplastic
(C) Soft and hard
(D) Elastic and Rigid
51. Which of the following is not an excavating equipment?
- (A) Power shovel (B) Scraper
(C) Dragline (D) Hoe
52. In PERT analysis the actual performance of task is known as :
- (A) Activity (B) Event
(C) Task (D) Work

53. The survey in which curvature of earth is taken into consideration is called :
- (A) Plane survey (B) Geodetic survey
(C) Geological survey (D) Aerial survey
54. The longest chain line passing through the center of the area is known as :
- (A) Base line (B) Tie line
(C) Check line (D) All the above
55. The total station instrument is a :
- (A) infrared wave instrument (B) light wave instrument
(C) microwave instrument (D) none of the above
56. Turning the telescope in horizontal plane is called :
- (A) transiting (B) centering
(C) swinging (D) none of the above
57. The level tube/bubble tube is filled with :
- (A) Air (B) Water
(C) Alcohol (D) None of the above
58. Instrument used to enlarging and reducing plans :
- (A) Clinometer (B) Pantagraph
(C) Ceylon ghat tracer (D) None of the above
59. The point on the celestial sphere exactly above the observer's station is known as :
- (A) Zenith (B) Pole
(C) Nadir (D) None of the above
60. The process of determining the present value of a building is called :
- (A) Estimation (B) Valuation
(C) Costing (D) None of the above
61. The method of quantity surveying used in Government Departments :
- (A) Center line method (B) Separate wall method
(C) Rate analysis (D) None of the above
62. Estimate expected to be least accurate is :
- (A) Supplementary estimate (B) Plinth area estimate
(C) Detailed estimate (D) Revised estimate