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Entrance Exam. For Ph. D. (Civil Engineering)

1. What type of chart is useful for comparing values over categories?
   (A) Pie Chart
   (B) Column Chart
   (C) Line Chart
   (D) Dot Graph

2. Which of the following variables cannot be expressed in quantitative terms?
   (A) Socio-economic Status
   (B) Marital Status
   (C) Numerical Aptitude
   (D) Professional Attitude

3. The essential qualities of a researcher are
   (A) Spirit of free enquiry
   (B) Reliance on observation and evidence
   (C) Systematization or theorizing of knowledge
   (D) All the above

4. A research paper is a brief report of research work based on
   (A) Primary Data only
   (B) Secondary Data only
   (C) Both Primary and Secondary Data
   (D) None of the above

5. In the process of conducting research 'Formulation of Hypothesis" is followed by
   (A) Statement of Objectives
   (B) Analysis of Data
   (C) Selection of Research Tools
   (D) Collection of Data

6. self-education is possible in what kind of library?
   (A) National Library
   (B) Public Library
   (C) Specific Library
   (D) College Library

7. One of the following is not an open-source software:
   (A) D Space
   (B) Windows
   (C) Green-stone
   (D) Linux

8. What is Bibliometry?
   (A) Function of Library Network
   (B) Information Management Service
   (C) Information Management Tool
   (D) Library Service

9. Information is ......
   (A) Raw Data
   (B) Processed Data
   (C) Input data
   (D) Organized data

10. Which of the following is not a non-random sampling method?
    (A) Cluster sampling
    (B) Quota sampling
    (C) Convenience sampling
    (D) Accidental sampling

11. An appropriate source to find out descriptive information is.................
    (A) Bibliography
    (B) Directory
    (C) Encyclopaedia
    (D) Dictionary

12. Questionnaire is a:
    (A) Research method
    (B) Measurement technique
    (C) Tool for data collection
    (D) Data analysis technique

13. "Controlled Group" is a term used in...............
    (A) Survey research
    (B) Historical research
    (C) Experimental research
    (D) Descriptive research

14. Which of the following is not a "Graphic representation"?
    (A) Pie Chart
    (B) Bar Chart
    (C) Table
    (D) Histogram

15. If the population proportion equals po Z Test = $(\bar{x} - \mu) / (\sigma / \sqrt{n})$, then is distributed:
   (A) As a standard normal variable, if n > 30
   (B) As a Poisson variable
   (C) As the t-distribution with v= n 1 degrees of freedom
   (D) As a distribution with v degrees of freedom

16. Which of the following is not true about e-journals?
   (A) They are distributed through digital methods
   (B) They also have editors or editorial boards
   (C) They are publications of serial nature
   (D) They are always free of cost

17. High Level Language is...................
   (A) Disk space dependent   (B) O. S. dependent
   (C) Machine independent   (D) Machine dependent

18. How is stochastic equation of information solved?
   (A) By statistical rules   (B) By dynamic rules
   (C) By statistical and dynamic rules   (D) None of these.

19. Final Stage in the Research Process is
   (A) Problem Formulations   (B) Data Collection
   (C) Data Analysis   (D) Report Writing

20. Which test is the part of the parametric test?
   (A) Sign Test   (B) Run Test for Randomness
   (C) Kruskal-Willis Test   (D) z-test

21. For linear elastic systems, the type of displacement function for the strain energy is
   (a) linear   (b) quadratic
   (c) cubic   (d) quartic

22. The point within the cross-sectional plane of a beam through which the resultant of the external loading on the beam has to pass through to ensure pure bending without twisting of the cross-section of the beam is called
   (a) moment centre   (b) centroid
   (c) shear centre   (d) elastic centre

23. A mild steel specimen is under uniaxial tensile stress. Young's modulus and yield stress for mild steel are 2×10^5 MPa and 250 MPa respectively. The maximum amount of strain energy per unit volume that can be stored in this specimen without permanent set is
   (a) 156 Nmm/mm^3 (b) 15.6 Nmm/mm^3
   (c)1.56 Nmm/mm^3 (d) 0.156 Nmm/mm^3

24. IS: 1343-1980 limits the minimum characteristic strength of pre-stressed concrete for post tensioned work and pretension work as
   (a) 25 MPa, 30 MPa respectively   (b) 25 MPa, 35 MPa respectively
   (c)30 MPa, 35 MPa respectively   (d) 30 MPa, 40 MPa respectively

25. King Closer is related to
   (a) door and window   (b) King post truss
   (c) queen post truss   (d) brick masonary

26. If the characteristic strength of concrete f$_{ck}$ is defined as the strength below which not more than 50% of the test results are expected to fall, the expression for f$_{ck}$ in terms of mean strength f$_m$ and standard deviation S would be
   (a) f$_m$ – 0.1645S   (b) f$_m$ – 1.645S
   (c)f$_m$ (d) f$_m$ + 1.645S

27. A summit curve is formed at the intersection of a 3% up gradient and 5% down gradient. To provide a stopping distance of 128 m, the length of summit curve needed will be
   (a) 271 m   (b) 298 m   (c) 322 m   (d) 340 m

28. A hill road is one which passes through a terrain with a cross slope of
    (a) 0-10%   (b) 10-25%
                                (c) 25-60%   (d) none of the above
29. Ruling gradient on the hill roads 300 m above M.S.L is kept
    (a) 4%
    (c) 6%   (b) 5%
                                (d) 7%
30. While aligning a hill road with a ruling gradient of 1 in 20, a horizontal curve of radius 80
    m is encountered. The compensated gradient on the curve will be
    (a) 1 in 15
    (c) 1 in 25   (b) 1 in 17
                                (d) 1 in 27
31. A masonry dam is founded on pervious sand having porosity equal to 45% and specific
    gravity of sand particles is 2.65. For a desired factor of safety of 3 against sand boiling, the
    maximum permissible upward gradient will be
    (a) 0.225   (b) 0.302
    (c) 1.0   (d) none of these
32. Sheep footed roller are recommended for compacting
    (a) granular soil   (b) cohesive soil
    (c) hard rock   (d) any type of soil
33. The effective stress friction angle of a saturated, cohesionless soil is 38^0. The ratio of shear
    stress to normal effective stress on the failure plane is
    (a) 0.781   (b) 0.616
    (c) 0.488   (d) 0.438
34. As per the Indian Standard soil classification system, a sample of silty clay with the liquid
    limit of 40% and plasticity index of 28% is classified as
    (a) CH   (b) CI
    (c) CL   (d) CL-ML
35. A wide channel is 1m deep and has a velocity of flow , V, as 2.13 m/s. If a disturbance is
    caused, an elementary wave can travel upstream with a velocity of
    (a) it is stressed to maximum   (b) it is on the verge of failure
    (c) it is in plastic stage   (d) it starts flowing
36. A soil mass is said to be in plastic equilibrium if
    (a) zero   (b) $11/\sqrt{2}$
    (c) 11 cm   (d) $11\sqrt{2}$ cm
37. A mild-sloped channel is followed by a steep-sloped channel. The profiles of gradually
    varied flow in the channel are
    (a) M_3, S_2 (b) M_3, S_3
    (c) M_2, S_1 (d) M_2, S_2
38. What is the hydraulic retention time of the wastewater in aeration tank?
    (a) 0.2 h   (b) 4.8 h
    (c) 10 h   (d) 24 h
39. Slack time in PERT analysis
    (a) can never be greater than zero   (b) is always zero for critical activities
    (c) can never be less than zero   (d) is minimum for critical events
40. Critical path lies along the activities having total float
    (a) positive   (b) negative
    (c) zero   (d) same

Answer Key Ph.D Entrance Examination (CIVIL)

1	B
2	C
3	D
4	C
5	C
6	B
7	B
8	C
10	D
11	A
12	C
12	C
13	C
14	C
15	A
16	D
17	C
18	C
19	D
20	D
21	B
22	C
23	D
24	D
25	D
26	D
27	B
28	C
29	B
30	C
31	B
32	B
33	A
34	B
35	B
36	C
37	D
38	B
39	D
40	C