

Seat No.

SET-A Total No. of Pages: 08

Ph.D. Entrance Examination, 2026

CIVIL Engineering

Day and Date:

Total Marks: 100

Time:

*Instructions: i) All questions are compulsory**ii) Each question carries 2 marks**iii) Write the correct option in the box at right**iv) Use of non-programmable calculator is allowed.*

		Correct Option
Q. 1)	The significance of research is to	D
	A) Identify and define opportunities and problems	
	B) Defining, monitoring and refining strategies	
Q. 2)	C) identifying economic options and developing technology	A
	D) All of the given options	
Q. 3)	Research Methodology refers to	C
	A) an approach to solve research problem in a systematic manner	
	B) the focus group in which one of the respondents acts as a moderator temporarily	
Q. 4)	C) efforts made to get more ideas till exhaustion	A
	D) None of the given option	
Q. 5)	The principle according to which an experiment should be repeated more than one for accuracy is	C
	A) principle of local control	
	B) principle of randomization	
Q. 6)	C) principle of replication	A
	D) principle of multiplication	
Q. 7)	What refers to the variable that can be measured or controlled by the researcher.	A
	A) Dependent variable	
	B) Independent variable	
Q. 8)	C) Extraneous variable	C
	D) Control variable	
Q. 9)	The type of sampling in which the entire universe is divided into groups and some groups are randomly selected in the sample is called	C
	A) Quota Sampling	
	B) Group Sampling	
Q. 10)	C) Cluster Sampling	C
	D) Systematic Sampling	

Q.6)	Primary purpose of exploratory research design is providing _____ to the unexplored area.		C
	A) Knowledge	B) Awareness	
	C) Insight	D) none	
Q. 7)	The type of sampling in which each element of population has a chance of getting selected in the sample is called		A
	A) Probability sampling	B) Non-Probability sampling	
	C) Restricted sampling	D) Unrestricted sampling	
Q.8)	If an error occurs because of improper division of sampling units, this is a type of		B
	A) Sampling error	B) Non-Sampling error	
	C) Enumeration error	D) Census error	
Q. 9)	Sampling errors can be reduced by		C
	A) Proper division of sampling units	B) Proper measuring device	
	C) Increasing sample size	D) Proper sampling frame	
Q.10)	The type of hypothesis that is assumed to be true is _____		D
	A) Deductive hypothesis	B) Inductive hypothesis	
	C) Directional hypothesis	D) Null hypothesis	
Q. 11)	Grouping of data is called as		C
	A) Editing	B) Coding	
	C) Classification	D) Tabulation	
Q.12)	Hypothesis is defined as		A
	A) A statement that the researcher wants to test through the data collected in a study.	B) A research question the results will answer.	
	C) A theory that underpins the study.	D) A statistical method for validation of results.	

Q. 13)	The process of quantifying data is referred to as ____?		C
	A) Typology	B) Editing	
	C) Enumeration	D) Coding	
Q.14)	Which essential things are expected from researchers while analyzing the data?		D
	A) To stay open and remain unbiased towards unexpected patterns and results.	B) To interpret the data and the results obtained.	
	C) To reveal some interesting patterns within the data that are worth exploring.	D) All of the given options.	
Q. 15)	Subjective research generally refers to _____?		D
	A) the subjective experiences of research participants	B) the fact that the researcher's perspective is embedded within the research process	
	C) data derived from observations of events as they take place	D) All of the given options	
Q.16)	What is the criteria for a workable hypothesis?		D
	A) A hypothesis should be relevant	B) A hypothesis should be empirically verifiable	
	C) A hypothesis must have predictive and explanatory power	D) All of the given options	
Q. 17)	The type of validity that takes care of adequate coverage of measurement and scaling techniques is		B
	A) Content Validity	B) Test-Retest validity	
	C) construct validity	D) Criterion-related validity	
Q.18)	The approach of scale development according to which correlation between different items is established on the basis of a common factor is		A
	A) Factor analysis approach	B) Item analysis approach	
	C) Cumulative scale approach	D) Consensus approach	
Q. 19)	In rating scale, _____ occurs when respondents show reluctance to select extreme ratings		B
	A) Error of dispersion	B) Error of central tendency	
	C) Error of consistency	D) None of the given options	

Q.20)	Measurement refers to _____?		A
	A) some yardstick to determine the characteristic of any physical objects	B)a solution that is designated for a specific problem	
	C) figurative meaning of a word	D)branch of measurement that tries to measure abstract concepts	
Q. 21)	Scaling refers to _____?		D
	A)some yardstick to determine the characteristic of any physical objects	B)a solution that is designated for a specific problem	
	C) figurative meaning of a word	D)branch of measurement that tries to measure abstract concepts	
Q.22)	Which one of the given options cannot be taken as base of scale classification?		D
	A) Subject orientation	B)Degree of subjectivity	
	C) Number of dimensions	D) Sampling frame	
Q. 23)	The data collected from the internet is called _____?		C
	A)Primary data	B)Ordinal data	
	C)Secondary data	D) Ratio data	
Q.24)	Which Factor is considered in selecting appropriate method of data collection?		D
	A) Objective of research	B)Time frame of the research	
	C) Availability of resources	D) All of the given options	
Q. 25)	What does the term reliability indicate in data collection process?		B
	A)We can trust that the research has being carried out to a high standard	B)That the tool of data collection can be regarded as measuring accurately and consistently	
	C) That the researcher can be trusted	D)That the results are accurate	
Q.26)	What is the phenomenon of cavitation in hydraulic systems?		C
	A) The formation of air bubbles in the hydraulic fluid due to low pressure	B)The formation of air bubbles in the hydraulic fluid due to high pressure	

	C) The formation of vapor bubbles in the hydraulic fluid due to low pressure	D) The formation of vapor bubbles in the hydraulic fluid due to high temperature	
Q. 27)	What is the boundary layer in fluid flow?		A
	A) The layer of fluid near a solid boundary where the velocity is zero	B) The layer of fluid near a solid boundary where the velocity is maximum	
	C) The layer of fluid where the flow is turbulent	D) The layer of fluid where the flow is laminar	
Q. 28)	What is the term for the process of settlement of a soil mass under a constant load over time?		A
	A) Consolidation	B) Compaction	
	C) Creep	D) Settlement	
Q. 29)	What is the term for the pressure exerted by the groundwater on the foundation of a structure?		C
	A) Hydrostatic pressure	B) Pore water pressure	
	C) Uplift pressure	D) Seepage pressure	
Q. 30)	What is the term for the phenomenon of a structure exhibiting different responses to different loading frequencies?		C
	A) Resonance	B) Damping	
	C) Frequency response	D) Dynamic amplification	
Q. 31)	What is the term for the phenomenon of a structure undergoing large deformations under constant load?		A
	A) Creep	B) Shrinkage	
	C) Relaxation	D) Plastic flow	
Q. 32)	What is the type of concrete that is designed to have a high flowability and can fill complex shapes without vibration?		B
	A) High-Strength Concrete (HSC)	B) Self-Compacting Concrete (SCC)	
	C) Fiber-Reinforced Concrete (FRC)	D) Lightweight Concrete (LWC)	

Q. 33)	What is the primary objective of traffic signal optimization?		D
	A) Minimize travel time	B) Maximize vehicle throughput	
	C) Reduce congestion	D) All of the above	
Q.34)	What is the type of intelligent transportation system (ITS) technology that uses sensors and cameras to detect and respond to traffic incidents?		B
	A) Traffic monitoring system	B) Incident detection system	
	C) Traffic management system	D) Advanced traveler information system	
Q. 35)	What is the primary purpose of a benchmark in surveying?		B
	A) To mark the boundary of a property	B) To establish a reference point for elevation	
	C) To determine the distance between two points	D) To measure the angle between two lines	
Q.36)	What is the primary function of a Geographic Information System (GIS)?		A
	A) To store and analyze spatial data	B) To create maps and visualizations	
	C) To perform statistical analysis	D) To manage databases	
Q. 37)	What is the term for the process of assigning a coordinate system to a spatial dataset?		A
	A) Georeferencing	B) Geocoding	
	C) Spatial registration	D) Coordinate transformation	
Q.38)	What is the term for the process of combining multiple spatial datasets to create a new dataset?		A
	A) Overlay analysis	B) Spatial join	
	C) Data integration	D) Map algebra	
Q. 39)	What is the type of soil that is most susceptible to liquefaction during an earthquake?		C
	A) Clay	B) Silt	
	C) Sand	D) Gravel	
Q.40)	What is the type of structural analysis that takes into account the nonlinear behavior of materials?		B

	A) Linear elastic analysis	B)Nonlinear elastic analysis	
	C) Plastic analysis	D) Dynamic analysis	
Q. 41)	What is the primary objective of construction project management?		D
	A)To complete the project on time	B)To complete the project within budget	
	C) To ensure the project meets quality standards	D)All of the above	
Q.42)	What is the tool used to track and control project progress?		D
	A) Gantt chart	B)Critical path method (CPM)	
	C)Program evaluation and review technique (PERT)	D) All of the above	
Q. 43)	What is the term for the process of disinfecting water to make it safe for consumption?		A
	A)Chlorination	B)Fluoridation	
	C)Coagulation	D)Sedimentation	
Q. 44)	What is the type of solid waste management that involves collecting and disposing of waste in a controlled manner?		A
	A)Landfilling	B) Composting	
	C)Recycling	D)Incineration	
Q. 45)	What is the term for the phenomenon of RCC structures failing due to inadequate reinforcement?		A
	A)Brittle failure	B) Ductile failure	
	C)Shear failure	D)Flexural failure	
Q. 46)	What is the primary advantage of using precast concrete structures?		B
	A)Increased construction time	B) Improved quality control	
	C)Higher cost	D)Limited design flexibility	
Q. 47)	What is the method of connecting precast concrete elements?		D
	A)Welding	B) Bolting	
	C)Grouting	D)All of the above	

Q. 48)	Which software is commonly used for structural analysis and design?		B
	A)AutoCAD	B) STAAD Pro	
	C)MS Office	D)Adobe Photoshop	
Q. 49)	Which software is used for surveying and geospatial data analysis?		A
	A)ArcGIS	B) AutoCAD Civil 3D	
	C)MS Project	D) Primavera	
Q. 50)	What is the purpose of using BIM software in civil engineering?		C
	A)To create 2D drawings	B) To analyze structural behavior	
	C)To manage project data and collaborate with stakeholders	D)To estimate project costs	