CBCS SCHEME

BCV657D

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Question Paper Version : A

Sixth Semester B.E./B.Tech. Degree Examination, June/July 2025
Quality Control and Quality Assurance

Time: 1 hr.] [Max. Marks: 50

INSTRUCTIONS TO THE CANDIDATES

1. Answer all the **fifty** questions, each question carries one mark.
2. Use only **Black ball point pen** for writing / darkening the circles.
3. **For each question, after selecting your answer, darken the appropriate circle corresponding to the same question number on the OMR sheet.**
4. Darkening two circles for the same question makes the answer invalid.
5. **Damaging/overwriting, using whiteners** on the **OMR** sheets are strictly prohibited.

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1. Who is known for the "Zero Defects" concept in Quality management?
   a) W. Edwards Deming b) Philip B. Crosby
   c) Joseph Juran d) Walter Showhart

2. What does "PDCA" in the PDCA cycle stands for?
   a) Plan, Develop , Control , Act b) Plan, Do, Check , Act
   c) Process , Design , Control , Audit d) Prevent , Detect , Correct , Apply

3. Which of the following is not a cost associated with quality?
   a) Prevention cost b) Appraised cost
   c) Inspection cost d) External failure cost

4. What is the main focus of Quality Assurance (QA)?
   a) Detecting and fixing defects b) Ensuring defects do not occur
   c) Reducing the cost of materials d) Speeding up production

5. Which tools is commonly used in Quality control to monitor process?
   a) Pareto chart b) Control chart c) Fish bone diagram d) Histogram

6. In Total Quality Management (TQM), customer satisfaction is achieved through :
   a) Lowering production costs
   b) Continuous improvement and employee involvement
   c) Eliminating the need for inspections
   d) Faster production time

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7. Which of these is a reason for poor quality in construction?
a) Use of skilled labour
b) Adhering to international standards
c) Poor process design and lack of training
d) Proper material testing

8. What is the primary focus of Quality Engineering?
a) Managing customer complaints
b) Improving design and process reliability
c) Reducing worker wages
d) Eliminating the need for inspections

9. What is a key benefit of implementing a Quality Management System (QMS)?
a) Reduced need for raw materials
b) Improved customer satisfaction and product reliability
c) Eliminates competition
d) Avoids the need for process documentation

10. The key purpose of ISO 9001 certification is to :
a) Improve product pricing strategies
b) Provide a framework for consistent quality management
c) Eliminate all production defects
d) Ensure 100% inspection of products

11. Who developed the "14 points for Management" to improve quality and productivity?
a) Philip B. Crosby
b) Joseph Juran
c) W. Edwards Deming
d) Kaoru Ishikawa

12. What does the Cost of Quality (COQ) concept focus on?
a) The cost of hiring Quality Inspectors
b) The total cost incurred to prevent detect and correct defective products
c) The cost of raw materials in production
d) The total wages paid to quality control staff

13. Which of the following is not a key principle of TQM?
a) Customer focused approach
b) Continuous improvement
c) High defect tolerance
d) Employee involvement

14. What is "Quality Function Deployment" (QFD) used for?
a) Reducing production costs
b) Translating customer requirements into products features
c) Eliminating process inspections
d) Increasing production speed.

15. Which of the following best describes Benchmarking?
a) Comparing an organizations processes with the best industry practices
b) Reducing employee salaries to lower costs
c) Increasing production without considering quality
d) Avoiding competition in the industry

16. Which of the following is not a principle of the ISO 9001 : 2015 standard?
a) Customer focus
b) Process approach
c) Profit maximization
d) Continuous improvement

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17. ISO 14000 is primarily focused on :
a) Financial management
b) Environmental management
c) Reducing employee turnover
d) Increasing production speed

18. Which of the following is not a type of bench marking?
a) Internal Benchmarking
b) Competitive Benchmarking
c) Strategic Benchmarking
d) Random Benchmarking

19. What type of waste does ISO 14000 aims to reduce?
a) Material waste
b) Time waste
c) Energy waste
d) All of these

20. What is an important element of performance evaluation in Quality Management?
a) Customer satisfaction surveys
b) Employee feed back
c) Financial analysis
d) All of these

21. Which of the following NOT a measure of central tendency?
a) Mean
b) Median
c) Mode
d) Standard deviation

22. What is the minimum number of specimens required for a concrete strength test as per IS 456 : 2000
a) 1
b) 2
c) 3
d) 5

23. Which of the following measure is used to determine variability in data?
a) Mean
b) Median
c) Range
d) Mode

24. What is the recommended cube size for compressive strength testing of concrete?
a) 100 mm × 100 mm × 100 mm
b) 150 mm × 150 mm × 150 mm
c) 200 mm × 200 mm × 200 mm
d) 50 mm × 50 mm × 50 mm

25. In sampling , a subset of data takes from a population is called
a) Census
b) Population
c) Sample
d) Central group

26. What is the main advantage of using Statistical Quality Control in construction?
a) It reduces the number of workers needed
b) It ensures complete elimination of defects
c) It helps in monitoring and controlling quality using statistical methods
d) It increases construction costs significantly

27. The acceptance criteria for concrete as per IS 456 : 2000 states that no individual test result should be less than
a) Characteristic strength
b) (Characteristic strength – 3 MPa)
c) (Characteristic strength + 5 MPa)
d) (Characteristic strength – 5 MPa)

28. As per IS 456: 2000, concrete should be tested at how many days to determine its characteristic strength?
a) 3 and 7 days
b) 7 and 14 days
c) 7 and 28 days
d) 14 and 28 days

29. What is the primary purpose of control chats in Statistical Quality Control?
a) To increase project costs
b) To monitor variation in construction quality
c) To eliminate all defects permanently
d) To calculate the total cost of the project

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30. In a normal distribution , approximately what percentage of data falls within ± 1 standard deviation if the mean.
a) 50 % b) 68 % c) 90 % d) 99 %

31. Which of the following is a major cause of errors in concrete construction?
a) Inadequate curing
b) Use of high – quality materials
c) Proper mix design
d) Accurate measurement of materials

32. As per IS 456 : 2000, what is the minimum frequency of testing cement for fineness?
a) Every 1000 bags
b) Every 50 tonnes
c) Every batch received
d) Once a year

33. Which is code provides guidelines for the acceptance and rejection of cement?
a) IS 456 b) IS 4031 c) IS 269 d) IS 383

34. The standard test for determining the compressive strength of cement is conducted at how many days.
a) 1, 3 and 7 days b) 3, 7 and 28 days c) 7, 14 and 21 days d) 14, 21 and 28 days

35. Which test is NOT commonly conducted on find aggregate (sand)?
a) Sieve analysis
b) Water absorption test
c) Elongation index test
d) Silt content test

36. According to IS 383, the maximum permissible silt content in fine aggregate for concrete is?
a) 2 % b) 5 % c) 10 % d) 15 %

37. As per IS 456 : 2000, the compressive strength of M20 grade concrete at 28 days should be atleast
a) 10 MPa b) 15 MPa c) 20 MPa d) 25 MPa

38. Which test is used to determine the workability of fresh concrete?
a) Compressive strength test
b) Slump test
c) Soundness test
d) Los Angeles abrasion test

39. The frequency of testing cement for setting time in construction project should be :
a) Once per 100 tonnes
b) Once per 50 tonnes
c) Once per 10 tonnes
d) Every batch received

40. Which of the following tests is NOT performed on steel reinforcement bars?
a) Tensile strength test
b) Bend test
c) Impact test
d) Soundness test

41. At which stage of construction is feasibility and viability of the project assessed?
a) Conceptual design
b) Preliminary design
c) Detailed design
d) Construction

42. Which quality assessment test is used to measure the surface hardness of concrete?
a) Ultrasonic Pulse Velocity (USPV) Test
b) Slump Test
c) Rebound Hammer Test
d) Compressive Strength Test

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43. Which IS Code provides guidelines for NDT of concrete?
a) IS 456 b) IS 516 c) IS 13311 d) IS 1786

44. The Rebound Hammer Test gives unreliable results of the concrete surface is :
a) Dry and clean b) Smooth and flat c) Rough and wet d) Newly cast

45. The Ultrasonic Pulse Velocity (USPV) test is primarily used to assess :
a) Compressive strength of concrete b) Surface hardness
c) Density and homogeneity of concrete d) Water absorption on bricks

46. Which of the following factors affects USPV test results?
a) Concrete density b) Surface moisture
c) Reinforcement presence d) All of these

47. If USPV test results indicates velocity between 3 km/sec and 3.5 km/sec, the concrete quality is classified as :
a) Excellent b) Good c) Medium d) Doubtful

48. At which stage construction are the final quality checks and documentation completed?
a) Conceptual design b) Detailed design
c) Handover d) Preliminary design

49. What is the minimum recommended age of concrete for conducting USPV test?
a) 3 days b) 7 days c) 14 days d) 28 days

50. According to IS 13311, what is the standard angle at which a rebound hammer should be held during testing?
a) 30º b) 45º c) 60º d) 90º

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