

Assessment Blueprint

Assessment Overview

Sector	Construction
Job Role	Construction Laboratory & Field Technician
QP Code	CON/Q0402
Version	3.0
NSQF level	3.5
No. of Questions (Theory + Practical+Viva)	34+7+6=47
Duration (Minutes)	Theory: 60 Minutes Viva: 60 Minutes Practical: 360 Minutes
Acceptable level of variance in duration and no. of Questions Per NOS	+10%
Language	English

INSTRUCTIONS

1. Total duration of the examination is 480 Minutes (Theory: 60 Minutes + Viva: 60 Minutes + Practical: 360 Minutes)

S.No.	NOS Code	NOS Details	Question Type	Question	Option 1 (A)	Option 2 (B)	Option 3 (C)	Option 4 (D)	Correct Answer	Marks Assigned for the
1	CON/N0404	Operate and maintain test instruments and equipment for construction material testing	MCQ Type	What should be done before operating construction material testing equipment?	Inspect equipment condition	Adjust test results	Change calibration values	Replace test samples	A	6
2				Why should test instruments be calibrated regularly?	Extend testing duration	Increase testing speed	Reduce sample quantity	Maintain measurement accuracy	D	6
3				Which practice helps maintain testing equipment in good working condition?	Operate beyond capacity	Modify internal parts	Store without protection	Clean after use	D	6
4				What should a technician do if a testing instrument shows abnormal readings?	Change sample properties	Continue testing normally	Record estimated readings	Report the instrument fault	D	6
5				Which record is important for monitoring testing equipment maintenance?	Maintenance log	Material purchase list	Worker attendance sheet	Site progress report	A	6
6	CON/N0405	Carry out testing of cement, concrete, bricks and aggregates	MCQ Type	Which test determines the consistency of cement paste?	Slump cone test	Vicat consistency test	Impact value test	Crushing value test	B	6
7				Which test is commonly used to measure the workability of fresh concrete?	Water absorption test	Abrasion test	Slump test	Soundness test	C	6
8				Which test determines the compressive strength of concrete specimens?	Elongation test	Fineness test	Flakiness test	Compression test	D	6
9				Which property of bricks is commonly evaluated through water absorption testing?	Elasticity	Porosity	Ductility	Hardness	B	6
10				Which test determines the particle size distribution of aggregates?	Penetration test	Vicat test	Sieve analysis	Slump test	C	6
11	CON/N0406	Carry out testing of soil and bitumen in field and site laboratory	MCQ Type	Which field test is commonly used to determine the in-situ density of compacted soil?	Hydrometer analysis	Sand replacement test	Atterberg limits test	Proctor compaction test	B	6
12				Which test determines the moisture density relationship of soil in laboratory conditions?	California bearing ratio	Sand replacement test	Proctor compaction test	Plate load test	C	6
13				Which property of bitumen is determined using a penetration test?	Flash point	Softening point	Ductility	Consistency	D	6
14				Which test determines the temperature at which bitumen softens under specified conditions?	Ring and Ball test	Viscosity test	Penetration test	Ductility test	A	6
15				Which test measures the ability of bitumen to stretch before breaking?	Penetration test	Softening point test	Ductility test	Flash point test	C	6
16	CON/N8001	Work effectively in a team to deliver desired results at the workplace	MCQ Type	Which skill helps laboratory technicians coordinate testing activities effectively?	Technical skills	Planning skills	Teamwork skills	Analytical skills	C	6
17				Which practice helps team members complete laboratory testing according to schedule?	Independent reporting	Task coordination	Separate decision-making	Individual planning	B	6
18				Which behaviour supports effective collaboration during material testing activities?	Delaying important updates	Working without discussion	Maintaining separate records	Sharing test information	D	6
19				What should a technician do when a team member needs assistance during testing?	Wait for instructions	Continue assigned testing	Reassign laboratory tasks	Provide appropriate support	D	6
20				Which approach helps a laboratory team achieve accurate testing outcomes?	Completing tasks independently	Changing procedures individually	Coordinating responsibilities	Working without communication	C	6
21	CON/N8002	Plan and organize work to meet expected outcomes	MCQ Type	Which activity should be completed first when planning laboratory testing work?	Identify work requirements	Allocate personal preferences	Prepare final reports	Arrange completed samples	A	6
22				Which practice helps organize testing activities according to required deadlines?	Delay sample preparation	Change test priorities	Prepare a work schedule	Repeat completed testing	C	6
23				Which factor should be considered when arranging resources for testing activities?	Personal convenience	Equipment availability	Laboratory decoration	Individual preferences	B	6
24				What should be monitored to ensure laboratory work meets planned outcomes?	Staff preferences	Work progress	Equipment appearance	Office arrangements	B	6
25				What should be done when testing progress differs from the planned schedule?	Take corrective action	Continue without review	Change test requirements	Delay remaining activities	A	6
26	CON/N9001	Work according to personal health, safety and environment protocols at construction site	MCQ Type	Which PPE provides essential protection for a technician working at a construction site?	Protective gloves	Respiratory mask	Safety helmet	Safety harness	C	6
27				What should be done before handling construction material testing equipment?	Remove protective guards	Modify equipment settings	Increase operating speed	Inspect equipment condition	D	6
28				Which practice helps maintain a safe laboratory and construction work area?	Leave equipment unsecured	Keep work areas orderly	Block emergency pathways	Store chemicals randomly	B	6
29				What should a technician do after identifying a hazardous condition at site?	Record it later	Move warning signs	Continue testing normally	Report it promptly	D	6
30				Which practice supports environmental protection during construction material testing?	Discharge chemicals into drains	Store waste near soil	Mix different wastes	Dispose waste appropriately	D	6
31	DGT/VSQ/N0101	Employability Skills (30 Hours)	MCQ Type	Which skill helps a Construction Laboratory Technician communicate test information clearly?	Planning skills	Communication skills	Problem-solving skills	Teamwork skills	B	5
32				Which skill helps a technician organize testing activities within planned deadlines?	Creative thinking	Leadership skills	Time management	Negotiation skills	C	5
33				Which skill helps technicians cooperate during construction material testing activities?	Numeracy skills	Decision-making skills	Digital skills	Teamwork skills	D	5
34				Which skill helps a technician identify and resolve routine workplace issues?	Time management	Teamwork skills	Communication skills	Problem-solving skills	D	5

S.No.	NOS Code	NOS Details	Question Type	Question	Tasks to be Performed	Marks Assigned for the Question
1	CON/N0404	Operate and maintain test instruments and equipment for construction material testing	Structured Practical Task	Demonstrate how you will operate a compression testing machine for concrete cubes.	1. Check the machine and loading surfaces. 2. Clean the concrete cube before testing. 3. Place the cube centrally between the platens. 4. Set the machine controls as instructed. 5. Apply load gradually until the required test endpoint. 6. Record the maximum load and test result.	60
2	CON/N0405	Carry out testing of cement, concrete, bricks and aggregates	Structured Practical Task	Demonstrate how you will carry out a brick water absorption test.	1. Select and clean the required brick samples. 2. Weigh each dry brick accurately. 3. Place the bricks in water for the specified period. 4. Remove the bricks and wipe surface water. 5. Weigh the saturated bricks accurately. 6. Calculate and record the water absorption value.	60
3	CON/N0406	Carry out testing of soil and bitumen in field and site laboratory	Structured Practical Task	Demonstrate how you will carry out a bitumen penetration test in the site laboratory.	1. Prepare the bitumen sample and penetration apparatus. 2. Fill the container with the bitumen sample. 3. Condition the sample at the specified temperature. 4. Position the standard needle over the sample. 5. Apply the specified load and test duration. 6. Measure and record the penetration value.	60
4	CON/N8001	Work effectively in a team to deliver desired results at the workplace	Structured Practical Task	Demonstrate how you will coordinate with team members during laboratory testing.	1. Discuss the testing procedure with team members. 2. Understand individual responsibilities for the test. 3. Arrange samples, tools and equipment accordingly. 4. Coordinate activities during testing. 5. Share observations and test readings with the team. 6. Confirm completion of the testing activity.	70
5	CON/N8002	Plan and organize work to meet expected outcomes	Structured Practical Task	Demonstrate how you will organize test samples before starting laboratory testing.	1. Collect the required material samples. 2. Check sample identification details. 3. Label samples with required information. 4. Arrange samples according to testing sequence. 5. Store samples under specified conditions. 6. Confirm samples are ready for testing.	70
6	CON/N9001	Work according to personal health, safety and environment protocols at construction site	Structured Practical Task	Demonstrate how you will handle construction material testing waste safely.	1. Collect waste generated during testing. 2. Identify different types of laboratory waste. 3. Separate waste into designated containers. 4. Store hazardous waste in suitable containers. 5. Keep waste containers properly closed and labelled. 6. Dispose of waste according to site procedures.	70
7	DGT/VSQ/N0101	Employability Skills (30 Hours)	Structured Practical Task	Create a CV for the job role of Construction Laboratory & Field Technician	1. Open a suitable CV format or document. 2. Enter personal and contact information. 3. Add education, technical skills and relevant experience. 4. Mention construction material testing skills and equipment knowledge. 5. Review the CV and save it in the required format.	30

S.No.	NOS Code	NOS Details	Question Type	Question	Suggested Answer	Marks Assigned for the Question
1	CON/N0404	Operate and maintain test instruments and equipment for construction material testing	Oral Type	Why is calibration important for construction material testing equipment?	Calibration ensures the instrument provides accurate and reliable measurements by comparing its readings with a known standard.	5
2			Oral Type	How will you maintain testing equipment after completing the test?	I will clean the equipment, check for damage, store it properly, and record maintenance or defects according to laboratory procedures.	5
3	CON/N0405	Carry out testing of cement, concrete, bricks and aggregates	Oral Type	What test is commonly performed to determine the consistency of cement paste?	The standard consistency test determines the amount of water required to prepare cement paste of standard consistency using a Vicat apparatus.	5
4			Oral Type	Which test is used to determine the workability of fresh concrete?	The slump test is commonly used to determine the workability and consistency of fresh concrete at the construction site.	5
5	CON/N0406	Carry out testing of soil and bitumen in field and site laboratory	Oral Type	Why is the compaction test performed on soil?	The compaction test determines the relationship between moisture content and dry density to achieve suitable soil compaction at construction sites.	5
6			Oral Type	What does the penetration test determine for bitumen?	The penetration test determines the hardness or consistency of bitumen by measuring the depth a standard needle penetrates under specified conditions.	5