

INDIAN INSTITUTE OF TECHNOLOGY (INDIAN SCHOOL OF MINES), DHANBAD

No: 411002/2/2022-NFR

Dated- 14.11.2022

NOTICE

Ref:- Advertisement no: 411002/2/2021-NFR dated 18.02.2022 for recruitment of Technical Officer, IIT (ISM), Dhanbad in Pay Level -10.

Applicants, shortlisted for recruitment tests for the post of Technical Officer are hereby informed about the schedule of tests as under:-

Date	Test	Time and Venue
11.12.2022 (Sunday)	Written Test [Objective type] (80 marks)	Reporting Time: 09:00 AM Test Time - 09:30 AM – 11:00 AM New Lecture Hall Complex, IIT (ISM) Dhanbad
	Practical Skill Test: (20 marks)	Reporting Time: 01:00 PM Test Time – 01:30 PM onwards (in four batches) CRE Building, IIT (ISM) Dhanbad
13.12.2022 (Tuesday)	Document verification	Reporting Time: 02:30 PM 02:30 PM – 03:00 PM New Conference Room, 1 st floor, Admin Block, IIT (ISM) Dhanbad
	Presentation and Interview	Test Time - 03:00 PM onwards Conference Room, 1 st floor, Admin Block, IIT (ISM) Dhanbad

2. Recruitment tests consist three steps, viz. Step-I (Written Test), Step-II (Practical Skill Test) and Step-III (Document verification + Presentation and Interview).

3. Syllabus for Written Test and Practical Skill Test as per **Annexure A**, which will be conducted as follows:-

Written Test: 80 Marks - This will comprise of total 80 MCQs based on the Syllabus of Mechanical Engineering, Automation and /or Robotics Engineering, Electronics and Electrical (20 questions from each section).

*Scientific calculator will be allowed during Written Test.

Practical Skill Test: - 20 Marks

4. Minimum cut off marks:-

No. of Vacancy	No. of candidates to be qualified in Written Test	No. of candidates to be qualified in Practical Skill Test	No. of candidates shortlisted for Presentation & Interview on the basis of combined performance in Written Test + Practical Skill Test
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UR- 01	Candidates scoring minimum qualifying marks i.e. 45%	Candidates scoring minimum qualifying marks i.e. 55%	Top Five (05) candidates scoring minimum qualifying marks in both Steps i.e. Written Test and Practical Skill Test
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- In case two or more candidates secure equal total marks in Written Test + Practical Skill Test, all such candidates will qualify for Presentation and Interview.

5. On the basis of total marks obtained in Step – I and Step – II (subject to obtaining the minimum qualifying marks in both) maximum five candidates shall be shortlisted for Step – III (Document Verification + Presentation and Interview).

6. Candidates qualified for Presentation & Interview will be required to give a Power Point Presentation on any topic related to their area of experience relevant to the post, not in more than 05 slides, for a maximum duration of 10 minutes.

7. Document Verification:-

The candidates shortlisted for Presentation and Interview, on the basis of performance in Written Test + Practical Skill Test, will have to produce the following documents in original (as mentioned in the advertisement) in support of their eligibility:

- Matriculation certificate in support of Date of Birth
- Mark sheet of educational qualifications
- Certificate of educational qualifications
- Experience certificate
- No Objection Certificate from the present employer (if they are employed in Central Govt./ State Govt./ Union Territory Administration/ Central or State Autonomous Bodies/ Central or State PSUs) etc.

In case, failing to produce the above documents, candidate will not be allowed to appear in Presentation and Interview.

8. Final selection will be on the basis of performance in the Presentation and Interview subject to successful completion of document verification.

9. Admit cards for the tests will be available for download on or after 05.12.2022. The candidates may visit https://nfr.iitism.ac.in/index.php/recruitment/User_login and download their admit card by login into portal using e-mail Id, Date of Birth and Mobile number (already registered).

(P R K Sinha)
Registrar (Actg.)

To,
The Webmaster to upload on the website of Institute

A. Syllabus of Written Test**1. Mechanical Engineering**

Basic knowledge of machining and metal cutting. Identification of type of cutters in the domain of turning, milling, and drilling. Skill in handling conventional lathe, mill and drill. Coding skill in CNC machines. Offset of work and tool. Knowledge of coordinate system in machining centers. Knowledge of measuring tool: contact type and non contact type. Basics of CAD CAM. Able to read engineering drawings. Hands-on skill in the operation of CNC machines.

2. Automation and /or Robotics Engineering

Fundamental concepts of robot structure, Degrees-of-freedom, Geometric Transformation. Robot Kinematics: Forward and inverse transformation, homogeneous transformations, link velocity, and acceleration analysis, Jacobian matrix. Statics and manipulator design, Force and Velocity Ellipsoids. Dynamics: Euler-Lagrange formulation, Newton-Euler formulation, forward and inverse dynamics.

3. Electronics

DC and AC circuit analysis, Networks Theorems, Semiconductors, Diodes and applications, BJT FET and its biasing, Amplifiers, Number Systems, Logic Gates, Boolean Functions, K-map, Combinational and Sequential circuits, latches and flip-flops, counters, shift-registers, Data converters: sample and hold circuits, Sampling Theorem, Amplitude and Frequency Modulation, Pulse Code modulation, Maxwell's equations, Plane waves and properties, Transmission Lines and impedance matching.

4. Electrical

Operational amplifier based circuits. Oscillators; 555 based monostable and astable multivibrator; Instruments for the Measurement of Voltage, Current, Power, Energy, Frequency, Power Factor. AC Bridges for capacitance, inductance, frequency measurement, DC Potentiometers. Measurement of Low, Medium and High Resistances. A/D and D/A conversions, Basic concept of various types of Power Generation; Single Phase and three phase AC circuit, resonance in single phase AC circuit, phasor diagrams, complex power.

B. Syllabus of Practical Skill Test

In this test the candidates' practical knowledge of working on the following will be tested:

Hands-on CNC, Practical demonstration in 3D printing, Sensor Technology/IOT; Pneumatics Circuits; Hands-on Practical on any industrial robot