



Emerging Technologies (Remote Proctored mode) Rules & Syllabus 2025

OBJECTIVE

New and emerging technologies are drastically changing the banking landscape. Data Analytics, Data Mining, Data Warehousing, Data Visualization, Database Querying, Big Data for Business, Blockchain etc. have led to innovations across bank verticals.

The course on “Emerging Technologies” will help bankers to familiarise themselves with these new technologies and remain ahead of the learning curve.

REMOTE PROCTORED MODE

Remote proctoring allows candidates to take an examination at a location of his/her choice while ensuring the integrity of the examination. These systems require students to confirm their identity, and, during the examination, the system monitors students through video, mic, etc. looking for behavior that could indicate unfair practices. Examinations are conducted over internet using a Desktop/Laptop. Taking examination using any other device is not permitted e.g. mobiles, tabs, etc.

ELIGIBILITY

1. Members and Non-Members of the Institute
2. Candidates must have passed the 12th standard examination in any discipline or its equivalent

SUBJECT OF EXAMINATION

Emerging Technologies

PASSING CRITERIA:

Minimum marks for pass in the subject is 50 out of 100.

EXAMINATION FEES*:

Particulars	For Members	For Non-Members
First attempt	Rs.1,100/- *	Rs.1,600/- *
Subsequent each attempt	Rs.1,100/- *	Rs.1,600/- *

* Plus Convenience charges and Taxes as applicable.

Please Note: Candidates are required to Register for every attempt separately.

While registering online for the examination candidates will have to choose examination date / time slot of his/her choice, the exam date/time will be allotted on first-cum-first-serve basis.

Candidates are required to take utmost care and precaution in selecting Exam Date and Time slot, as there is no provision to change the Exam date and Time slot in the system. Hence no request for change of Exam date and time slot will be entertained for any reason.

The fee once paid will **NOT** be refunded or adjusted on any account.

MEDIUM OF EXAMINATION:

Examination will be conducted in English only.

PATTERN OF EXAMINATION:

- (i) Question Paper will contain 100 objective type multiple choice questions for 100 marks.
- (ii) The examination will be held in the remote proctored mode only.
- (iii) There will NOT be negative marking for wrong answers.

DURATION OF EXAMINATION:

The duration of the examination will be of 2 hours.

PERIODICITY:

Examination will be conducted on pre-announced dates published on IIBF Web Site. Institute conducts the examination on 2nd & 4th Saturday and on all Sunday's. However, periodicity of the examination may be changed depending upon emerging requirements.

PROCESS

Registration

- 1) Application for examination should be registered online from the Institute's website www.iibf.org.in. The schedule of examination and dates for registration will be published on IIBF website.
- 2) At the time of registration, the candidate will select date/time of the examination.
- 3) On successful registration, admit letter will be generated. Candidates can download it.

Examination

- 1) Candidates will take examination under remote proctored mode on predetermined date/time from a secured environment. (Refer the Do's and Don'ts section for more information)
- 2) Candidates should login to the system half an hour before the exam start time.
- 3) The examination proctor will verify the candidate's face with the registered photo image of the candidate.
- 4) Candidate will also be asked to display any valid original photo id-card (Aadhaar card/e-Aadhaar/Employer's card/ PAN Card/ Driving License/ Election voter's card/ Passport etc.) for verification purpose. After successful verification the proctor will allow the candidate to start the examination.
- 5) Candidate may be required to show 360° view of the exam area using the webcam. So that the proctor can identify the object/check the suitability of the exam area/environment. A clear desk/table has to be ensured for appearing for the examination. No reference materials, books, notes, periodicals, mathematical tables, slides rules, stencils, post-its, chits, mobile phones, headsets (wired/ wireless), any other electronic gadgets are allowed to be kept on the table or the desk.
- 6) Both sides of the rough sheet (if it is going to be used) should be shown to proctor before and after the examination.
- 7) Once the examination begins live remote proctoring of the candidate's activities will take place throughout the examination period.
- 8) Under remote proctoring candidate's activities will be monitored using webcam, mic etc. Computer screen, browser, mouse, keyboard etc. will be monitored.
- 9) Proctor, if required, can convey information/ instructions to the candidate using chat box.

- 10) If a candidate indulges in unfair practices/suspicious acts, the proctor will intervene and warn the candidate through chat box or can cancel/stop the examination immediately as the case may be.
- 11) After completion of the examination/submission, provisional scorecard will be displayed on the screen.
- 12) RESULT ADVICE/ CONSOLIDATED MARKSHEET/ FINAL CERTIFICATE
 - a. Result Advice of candidates will be hosted on Institute's website on declaration of result, which can be downloaded by the candidates.
 - b. Consolidated mark sheet for candidates completing examination having more than one subject, will be available on the Institute's website after the declaration of results. Candidates can download the same after entering login credentials using their membership number and edit profile password.
 - c. For passed candidates, digitally signed certificate will be sent through e-mail registered with the Institute within 3 weeks after the declaration of result. The Paper Certificate issued by the Institute is discontinued.

Minimum System Requirement:

- I) Desktop/Laptop:
 - Browser: Google Chrome version 75 & above, with cookies & popups enabled
 - Video/Audio: Webcam and a good quality Mic is required
 - Operating system: Windows 8 or 10
 - RAM & Processor: 4 GB+ RAM, i3 5th Generation 2.2 Ghz or equivalent/higher
 - Pop-up blocker: Disabled
- II) Internet Connection:

Stable internet connection with at-least 2 mbps+ upload speed

Examination is not allowed on mobiles or tablets

Do's and Don'ts

1. The candidate will take the examination from a secured environment.
 - i. Place having desk and chair preferably with plain backdrop (area behind the candidate) with adequate lighting so that the candidate is visible to the proctor. The place should be noise free with no public movement in the surroundings.
All the items should be removed from the desk except computer/external webcam (if internal webcam is not available) /keyboard/mouse, other permitted items, if any.
 - ii. Examination will not be conducted if the examination area is a Public place, a noisy environment, having inadequate lighting, having public movement in examination area/around the candidate, having other computer or similar device in the examination area.
 - iii. The examination cannot be taken sitting on a couch, bed or on the floor.
2. Candidate's will take examination on a registered date/time from a secured environment.
Candidate who tries to appear after the scheduled examination date/time will not be allowed to appear for the examination.
3. Candidate's should login to the system half an hour before the examination start time.
4. No other persons are allowed in the examination area during the examination.

5. Candidate must keep ready his/her original photo identity card that has name and photo on the same side, admit letter, rough sheet, pen/pencil and calculator.
6. Candidates must dress decently as though they are in a public place and will be video recorded
7. Candidates must not talk to anyone during the examination period or talk/read to oneself loudly.
8. In case of emergency he/she can talk to helpdesk in case of any technical issue with permission from proctor.
9. Candidates must not use headphones, ear buds, or any other type of listening equipment.
10. Candidates must not communicate with any other person by any means.
11. Candidates must not use any phone for any reason.
12. Candidates must not leave the room/examination area during the examination for any reason without the permission of the proctor. Leaving the room/examination area or moving to another room/area during the examination for any reason will be treated as a violation of examination rules.
13. Candidates must not setup the computer at the time of examination. All the settings need to be done much before the examination time and tested properly. For any failure of the computer system during the examination period, Institute will not be responsible and candidate will lose his/her attempt.
14. Candidates must not switch off the webcam or mic or cover the webcam during the examination.
15. Candidates must not navigate away from examination window.
16. Candidate's face must be positioned in the middle of the camera view and candidate's face must be visible throughout the Examination.
17. Don't Position camera too low, too high or hooked onto a different monitor. Weird camera angles can be very distracting -- and unflattering -- during examination. The candidate should make sure that the camera is at eye level and on the monitor which is used for the examination.
18. Candidate must not look away from laptop/desktop screen, must face computer screen.
19. Candidate must not seek any assistance or refer study material/mobile/ for answering the questions.
20. Candidate must ensure that he/she has attempted every question and reviewed the accuracy of his/her answers before submitting the paper. Once submitted (even by mistake), re-examination will not be permitted.
21. On the exam day candidate is advised to ensure that the Laptop is fully charged and in case of Desktop it is connected to an uninterrupted power source for smooth conduct of examination.
22. Candidates are not permitted to logout/switch-off the computer for the sake of going to washroom and if they log out/switch-off, re-login will not be permitted.
23. Candidates will be allowed to use battery operated portable calculator during the examination. The calculator can be of any type up to 8 functions i.e. (Addition, Subtraction, Multiplication, Division, Percentage, Sq. root, Tax+ and Tax-), having 12 digits. Attempt to use any other type of calculator not complying with the specifications indicated above or having more features than mentioned above shall tantamount to use of unfair means. Scientific/Financial calculator is NOT allowed.

Debarment/Cancellation of examination:

- 1) If a candidate indulges in unfair practices/suspicious acts, the proctor will intervene and warn or cancel the test.
- 2) For any case of misconduct, the proctor can warn/cancel the test immediately as the case may be.
- 3) For any unfair act (cheating) during the examination, the result of such examination may be cancelled and he/she will be liable for punishment. Institute will also inform the employer of the candidate by giving the details of unfair practice and punishment levied on the candidate.

- 4) If the unfair act is determined after the examination, the result of such examination will be cancelled and he/she will be liable for punishment.
- 5) If any candidate attempts copying On screen question, takes photoshops or violates any of the examination rules, it will be considered to be an act of misconduct and he/she will be liable for punishment.
- 6) PLEASE REFER INSTITUTE'S WEBSITE UNDER THE MENU "EXAM RELATED" FOR DETAILS OF DEBARMENT PERIOD FOR UNFAIR PRACTICES ADOPTED BY CANDIDATES DURING CONDUCT OF INSTITUTE'S EXAMINATIONS.

Privacy

During the remote proctored examination, Images/Videos/Sounds of the candidates and their computer systems will be captured and stored for examination proctoring purposes. It is envisaged that candidates who register for the remote proctored examinations agree for the same.

PROOF OF IDENTITY

Non-members applying for Institute's examinations/ courses are required to attach/ submit a copy of any one of the following documents containing Name, Photo and Signature at the time of registration of Examination Application. Application without the same shall be liable to be rejected.

- 1) Photo ID Card issued by Employer or 2) PAN Card or 3) Driving License or 4) Election Voter's ID Card or 5) Passport 6) Aadhaar Card

CUT-OFF DATE OF GUIDELINES/ IMPORTANT DEVELOPMENTS FOR EXAMINATIONS

The Institute has a practice of asking questions in each exam about the recent developments/ guidelines issued by the regulator(s) in order to test if the candidates keep themselves abreast of the current developments. However, there could be changes in the developments/ guidelines from the date the question papers are prepared and the dates of the actual examinations.

In order to address these issues effectively, it has been decided that:

- (i) In respect of the examinations to be conducted by the Institute for the period March to August of a calendar year, instructions/ guidelines issued by the regulator(s) and important developments in banking and finance up to 31st December will only be considered for the purpose of inclusion in the question papers".
- (ii) In respect of the examinations to be conducted by the Institute for the period September to February of a calendar year, instructions/ guidelines issued by the regulator(s) and important developments in banking and finance up to 30th June will only be considered for the purpose of inclusion in the question papers.

The table given below further clarifies the situation.

Particulars Developments for Examination/s	Cut-off Date of Guidelines/ Important Developments for Examination/s
For the examinations to be conducted by the Institute for the period March 2024 to August 2024	31st December 2023
For the examinations to be conducted by the Institute for the period September 2024 to February 2025	30th June 2024

SYLLABUS

Module A: Introduction to Data Analytics

- Information Value Chain
- Sources of Data: Management Information Systems, IoT, Social Networks
- Structured Data & Unstructured Data
- Data Storage
- Data Extraction
- Data Analytics
- Descriptive Analytics
- Predictive Analytics
- Prescriptive Analytics
- Summarization & Interpretation
- Reporting different methods of presenting data in business analytics
- Various Visualization types
- Bubble charts, Geo-maps, Gauge charts, Tree map, Heat map and Motion charts
- AR & VR
- Data Analytics Tools
- Example Business Cases
- Data Analytics Tools
- Use of Data Analytics in Banking

Module B: Big Data

- Map Reduce Programming
- Hadoop Ecosystem
- SQL
- Advanced SQL
- In-database Analytics
- Spark
- Example Business Cases
- Use of Big Data in Banking

Module C: Block chain

- Introduction
- Byzantine agreement
- Blockchain Dynamics
- Types of Blockchains
- Hard and Soft forks
- Side chain
- Verifiers
- Qualities of Blockchain
- Distributed virtual machines/Distributed Ledger Technologies
- Smart contracts and Trust algorithms
- Interaction with existing systems
- Writing smart contracts
- Example Business Cases
- Use of Blockchain Technology in Banking

Module D: Machine learning – Supervised learning

- Machine Learning
- Design of a Learning system
- Types of machine learning

- Applications Mathematical foundations of machine learning
- Probability Theory
- Probability distributions
- Decision Theory
- Information Theory
- Linear Models for Regression
- Linear Models for Classification
- Naïve Bayes
- Discriminant Functions
- Probabilistic Generative Models
- Probabilistic Discriminative Models
- Bayesian Logistic Regression. Decision Trees
- Classification Tree
- Regression Trees and Pruning
- Support vector machines
- Example Business Cases

Machine learning – Unsupervised learning

- Clustering
- K-means Algorithm
- EM Algorithm
- Mixtures of Gaussians
- Dimensionality Reduction
- Factor analysis
- Principal Component Analysis
- Probabilistic PCA
- Independent components analysis
- Graphical Models
- Undirected graphical models
- Markov Random Fields
- Directed Graphical Models
- Bayesian Networks
- Conditional independence properties
- Inference
- Learning
- Generalization
- Hidden Markov Models
- Conditional random fields (CRFs)
- Example Business Cases
- Use of Machine Learning in Banking

Module E: Artificial Intelligence

- AI Basics (Divide and Conquer, Greedy, Branch and Bound, Gradient Descent)
- Convolution neural networks
- Image classification
- Text classification
- Emerging NN architectures
- NN basics (Perceptron and MLP, FFN, Backpropagation)
- Recurrent neural network
- Building recurrent NN
- Long Short-Term Memory
- Time Series Forecasting
- Natural Language Processing
- Expert System
- Knowledge management system
- Example Business Cases
- Use of Artificial Intelligence in Banking

The topics mentioned above will form the syllabus for the examination.

However, keeping in view the professional nature of examinations, all matters falling within the realm of the subject concerned will have to be studied by the candidate as questions can be asked on all relevant matters under the subject. Candidates appearing for the examination should particularly prepare themselves for answering questions that may be asked on the latest developments taking place covering the subject of the said examination.

Candidates are advised to refer to financial newspapers/ periodicals more particularly "IIBF VISION" and "BANK QUEST" published by the Institute. Candidates are advised to go through the updates put on the IIBF website from time to time and go through Master Circulars / Master Directions issued by RBI. All these sources are important from the examination point of view. Candidates are also to visit the websites of organizations like RBI, besides going through other books & publications covering the subject/ exam concerned etc. Questions based on current developments relating to the subject/ exam may also be asked.

The Institute also reserves to itself the right to vary the syllabus/ rules/ fee structure from time to time. Any alterations made will be notified from time to time.

MULTIPLE CHOICE QUESTIONS (MCQs) AND ANSWERS

"The Institute conducts its examinations through Multiple Choice Questions (MCQs). These MCQs are part of the Question Bank of the Institute and its Intellectual Property. As a matter of policy, these MCQs and their answers will not be shared by the Institute with the candidates or others and no correspondence in this regard will be entertained."

CONTACT DETAILS:

Register your queries through website www.iibf.org.in > Members/ Candidates Support Services (Help) or email all your queries to care@iibf.org.in

MEMBER SUPPORT SERVICE OFFICE:

Indian Institute of Banking & Finance
193-F, Maker Towers, 19th Floor,
Cuffe Parade,
Mumbai - 400 005
Tel.: 08069260700

FOR TRAINING/ CONTACT CLASSES RELATED QUERIES

CONTACT:

Leadership Centre
Indian Institute of Banking & Finance
Kohinoor City, Commercial-II, Tower-I, 3rd Floor,
Kiroil Road, Off L. B. S. Marg,
Kurla West,
Mumbai 400 070.
Tel.: 022-68507000 / 080692 60710
E-mail: training@iibf.org.in

PROFESSIONAL DEVELOPMENT CENTRES:

South Zone	North Zone	East Zone	West Zone
Indian Institute of Banking & Finance No.94, Jawaharlal Nehru Road, (100 Feet Road), Opp.Hotel Ambica Empire, Vadapalani, Chennai - 600 026. Tel:044 24722990/247 27961 Email:iibfsz@iibf.org.in	Indian Institute of Banking & Finance, C-5/30, Safdarjung Development Area (SDA), Near SDA Local Shopping complex Outer Ring Road, Opp IIT Delhi, NEW DELHI-110 016 Tel:011-2653 2194 / 2191 (office) Email:iibfnz@iibf.org.in	Indian Institute of Banking & Finance Avani Heights, 2nd Floor, 59A, Jawaharlal Nehru Road, Kolkata - 700020 Tel: 033-46032850 Email:iibfez@iibf.org.in	Indian Institute of Banking & Finance 192-F, Maker Towers, 19th Floor, Cuffe Parade MUMBAI - 400 005 Tel : 022-69437301/02 Email:iibfwz@iibf.org.in

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