INDIRA GANDHI INSTITUTE OF DEVELOPMENT RESEARCH

(An Advanced Research Institute Established by Reserve Bank of India)
Deemed University
Reaccredited with 'A' Grade by NAAC
General A.K. Vaidya Marg, Santosh Nagar, Goregaon (East), Mumbai - 400 065

Online Examination for Admission to M. Sc. Programme - 2014

DATE OF EXAM - 27.04.2014

INFORMATION HANDOUT

This Admission Test will be conducted ONLINE.

This handout contains details pertaining to various aspects of the online exam you are going to undertake and important instructions about related matters. You are advised to study the handout carefully as it will help you in preparing for the examination.

Before appearing for the online examination you should strictly ensure yourself that you fulfil the eligibility criteria in all respects. **IGIDR** will reject, at any stage, any candidate who does not satisfy the eligibility criteria.

Please note that you will have to pass in each of the tests. However, since this is a competitive examination, mere passing is not adequate. You have to obtain a high rank in the order of merit. You should, therefore, put in your best efforts in the examination.

The Online examination will comprise THREE multiple choice objective tests.

The Third Test will have TWO options and you should answer any ONE of them. You can choose the option you wish to answer irrespective of your academic background.

Sr. No.	Test	Questions	Time
I.	Comprehension, Reasoning and Analytical Ability	1-40	
II.	Basic Mathematics	41-80	Composite Time of 180 Minutes
IIIA.	Economics	81-110	
OR	OR		
IIIB.	Advanced Mathematics (Bachelors Ancillary Level)	111-140	

Note: If you are found to have answered questions from both Tests IIIA and IIIB, then only the Test with the higher number of answered questions will be graded. If equal number of questions are answered from both IIIA and IIIB, then only the first Test i.e. IIIA will be graded.

The time for the test is 180 minutes; however you may have to be at the venue for approximately 4 hours including the time required for logging in, collection of the call letters, giving of instructions etc. The tests will be provided in English. You can attempt any question at any point of time within these 180 minutes.

You have to qualify in each of the tests separately. The qualifying criteria will be decided by the institute.

Details of the On-line Examination Pattern

(1)	The examination would be conducted on-line i.e. on a computer.

(2)	The medium of examination is English.

(3)   All the questions will have multiple choices. Out of the five answers to a question only one will be the correct answer. **The candidate has to select the most appropriate answer and 'mouse click' that alternative which he/ she feels is appropriate/ correct. The alternative/ option that is clicked on and saved (or marked review) will be treated as the answer to that question. Answer to any question will be considered for final evaluation, only when candidates have submitted the answers by clicking on "Save & Next" or "Mark for Review & Next".**

(4)   <u>There will be penalty for wrong answers</u> marked by you. For every wrong answer marked, 1/4th of the marks assigned to that question will be deducted as penalty.

(5)   The clock has been set at the server and the countdown timer at the top right corner of your screen will display the time remaining for you to complete the exam. When the clock runs out the exam ends by default - you are not required to end or submit your exam.

(6)   The question palette at the right of screen shows one of the following statuses of each of the questions numbered:

        1️⃣   You have not visited the question yet.

        3️⃣   You have not answered the question. To save your answer, youMUST click on **Save & Next**

        5️⃣   You have answered the question.

        7️⃣   You have NOT answered the question but have marked the question for review

        9️⃣   You have answered the question but marked it for review.

        The Marked for Review status simply acts as a reminder that you have set to look at the question again. *If an answer is selected for a question that is Marked for Review, the answer will be considered in the final evaluation.*

(7)   To select a question to answer, you can do one of the following :

        (a)   Click on the question number on the question palette at the right of your screen to go to that numbered question directly. Note that using this option **does NOT save your answer** to the current question.

        (b)   Click on '**Save & Next**' to save answer to current question and to go to the next question in sequence.

        (c)   Click on '**Mark for Review and Next**' to save answer to current question, mark it for review, and to go to the next question in sequence.

(8)   You can view the entire paper by clicking on the **Question Paper** button.

(9)   To select your answer, click on one of the option buttons

(10)   To change your answer, click the another desired option button

(11)   To save your answer, you MUST click on **Save & Next**

(12)   To deselect a chosen answer, click on the chosen option again or click on the **Clear Response** button.

(13)   To mark a question for review click on **Mark for Review & Next**. If an answer is selected for a question that is Marked for Review, the answer will be considered in the final evaluation.

(14)   To change an answer to a question, first select the question and then click on the new answer option followed by a click on the **Save & Next** button.

(15)   Questions that are saved or marked for review after answering will ONLY be considered for evaluation.

(16)   Sections will be displayed on the top bar of the screen. Questions in a section can be viewed by clicking on the section name. The section you will view will be highlighted.

(17)   After clicking the **Save & Next** button on the last question for a section, you will automatically be taken to the first question of the next section.

(18)   You can move the mouse cursor over the section names to view the status of the questions for that section.

(19)   You can shuffle between sections and questions anytime during the examination as per your convenience.

(20) The candidates are requested to follow the instructions of the "Test Administrator" carefully. If any candidate does not follow the instructions / rules, it would be treated as a case of misconduct/ adoption of unfair means and such a candidate would be liable for debarment from appearing for examinations for a period as decided by the Organization.

(21) The candidates may ask the Test Administrator about their doubts or questions only before the commencement of the test. No query shall be entertained after the commencement of the examination.

(22) After the expiry of 180 minutes, the candidates will not be able to attempt any question or check their answers. The answers of the candidate would be saved automatically by the computer system even if he/ she has not clicked the "Submit" button.

(23) Please note :

(a) Candidates will not be allowed to "finally submit" before the completion of total time of the examination.

(b) Under no circumstances should a candidate click on any of the 'keyboard keys' once the exam starts as this will lock the exam.

General Instructions:

(1) Please note the date, time and venue address of the examination given in the call letter.

(2) You may visit the venue one day before the Online Examination to confirm the location so that you are able to report **on time** (as printed on the call letter) on the day of the examination. Late comers will not be allowed.

(3) The call letter should be brought with you to the examination venue along with your recent passport size photograph duly pasted on it.

(4) User name and password to enter the on-line exam site will be given at the venue on the day of exam.

(5) You must scrupulously follow the instructions of the Test Administrator and Organisation Representative at the examination venue. If you violate the instructions you will be disqualified and will be asked to leave the examination venue.

(6) No use of calculators (separate or with watch), books, note books or written notes, cell phones (with or without camera facility), or any other electronic device will be allowed during the examination.

(7) Please bring the call letter with your photograph affixed thereon, currently valid Photo identity proof in original and a photocopy of the same ID proof which you bring in original - THIS IS ESSENTIAL. Please hand over the call-letter alongwith photocopy of photo identity proof duly stapled together to the invigilator. Currently valid photo identity proof may be PAN Card/Passport/Driving Licence/Voter's Card/Bank Passbook with photograph/Photo Identity proof issued by a Gazetted Officer on official letterhead /Photo Identity proof issued by a People's Representative on official letterhead/Valid recent Identity Card issued by a recognised College/University/Aadhar Card with a photograph/Employee ID/Bar Council Identity card with photograph. Please note that your name as appearing on the call letter should exactly match the name as appearing on the photo identity proof. Female candidates who have changed first/last/middle name post marriage must take special note of this. If there is any mismatch between the name indicated in the Call Letter and Photo Identity Proof you will not be allowed to appear for the exam.

(8) Your responses (answers) will be analysed with other candidates to detect patterns of similarity of right and wrong answers. If in the analytical procedure adopted in this regard, it is inferred/concluded that the responses have been shared and scores obtained are not genuine/valid, your candidature may be cancelled. Any candidate who is found copying or receiving or giving assistance or engaging in any behaviour unbecoming of a candidate will not be considered for assessment. The Organisation may take further action against such candidates as deemed fit by it.

(9) You should bring with you a ball-point pen. A sheet of paper will be provided which can be used for rough work or taking down the question number you would like to review at the end of the test before submitting your answers. After the test is over you MUST hand over this sheet of paper to the Test Administrator before leaving the venue.

(10) The possibility for occurrences of some problem in the administration of the examination cannot be ruled out completely which may impact test delivery and/or result from being generated. In that event, every effort will be made to rectify such problem, which may include the conduct of another examination if considered necessary. Decision of the test conducting body in this regard shall be final. Candidates not willing to accept such change shall loose his/her candidature for this exam.

(11) If the examination is held in more than one session, the scores across various sessions will be equated to adjust for slight differences in difficulty level of different test batteries used across sessions. More than one session is required if the nodes capacity is less or some technical disruption takes place at any centre or for any candidate.

(12) In case more than one call letter has been generated candidates are advised to appear only once on the date and at the time mentioned on the respective call letter. All other call letters are to be surrendered.

(13) Anyone found to be disclosing, publishing, reproducing, transmitting, storing or facilitating transmission and storage of test contents in any form or any information therein in whole or part thereof or by any means verbal or written, electronic or mechanical or taking away the papers supplied in the examination hall or found to be in unauthorised possession of test content is likely to be prosecuted.

IMPORTANT POINTS TO REMEMBER

You are advised to bring with you the following:

(i) Call letter with photo affixed thereon and photo ID card in **Original** and photocopy as mentioned in point 7.

(ii) One Ball point pen

WISH YOU GOOD LUCK

Please note that the types of questions in this handout are only illustrative and not exhaustive. In the actual examination you will find questions of a higher difficulty level on some or all of these types and also questions on the types not mentioned here. Some sample questions are given below.

TEST I

TEST OF COMPREHENSION, REASONING AND ANALYTICAL ABILITY

This test is designed to examine the candidate's verbal ability, analytical reasoning and quantitative skills.

I. Of the 197 million square miles making up the surface of the globe, 71 percent is covered by the interconnecting bodies of marine water; the Pacific Ocean alone covers half the Earth and averages nearly 14, 000 feet in depth. The *continents* - Eurasia, Africa, North America, South America, Australia and Antarctica - are the portions of the *continental masses* rising above sea level. The submerged borders of the continental masses are the *continental shelves,* beyond which lie the deep-sea basins.

The oceans attain their greatest depths not in their central parts, but in certain elongated furrows, or long narrow troughs, called *deeps.* The profound troughs have a peripheral arrangement, notably around the borders of the Pacific and Indian oceans. The position of the deeps near the continental masses suggest that the deeps, like the highest mountains, are of recent origin, since otherwise they would have been filled with waste from the lands. This suggestion is strengthened by the fact that the deeps are frequently the sites of the world-shaking earthquakes. For example, the "tidal wave" that in April, 1946, caused widespread destruction along Pacific coasts resulted from a strong earthquake on the floor of the Aleutian Deep.

1. Which of the following would be the most appropriate title for the passage?
    (1) Features of the Earth's Surface   (2) Marine Topography   (3) The Causes of Earthquakes
    (4) Primary Geologic Considerations   (5) How to prevent Erosion.

    Ans.: (1)

2. According to the passage, the peripheral furrows or *deeps* are found —
    (1) only in the Pacific and Indian oceans   (2) near earthquakes
    (3) near the shore   (4) in the centre of the ocean
    (5) to be 14,000 feet in depth in the Pacific.

    Ans.: (3)

3. From this passage, it can be inferred that earthquakes —
    (1) occur only in the peripheral furrows
    (2) occur more frequently in newly formed land or sea formations.
    (3) are a prime cause of soil erosion
    (4) will ultimately "make mountains level"
    (5) are caused by the weight of the water

    Ans.: (2)

II. Fill in the blanks with the pair of words that best fits the meaning of the sentence.

Though he claimed the business was ...., his irritability ....that claim.
    (1) sound ....belied   (2) expanding .... supported   (3) downsizing .... vindicated
    (4) static .... contradicted   (5) booming .... affirmed

    Ans.: (1)

III. Select the pair that best expresses the relationship similar to the one in the original pair.
    MODERATOR : DEBATE ::
    (1) legislator : election   (2) chef : banquet   (3) auditor : lecture
    (4) conspirator : plot   (5) umpire : game

    Ans.: (5)

IV. The letters A, B, C, D, E, F and G, not necessarily in that order, stand for seven consecutive integers from 1 to 10.
    D is 3 less than A.
    B is the middle term.
    F is as much less than B as C is greater than D.
    G is greater than F.

1. The fifth integer is—
   (1) A   (2) C   (3) D   (4) E   (5) F

   Ans.: (2)

2. A is as much greater than F as which integer is less than G?
   (1) A   (2) B   (3) C   (4) D   (5) E

   Ans.: (4)

3. If A = 7, the sum of E and G is —
   (1) 8   (2) 10   (3) 12   (4) 14   (5) 16

   Ans.: (2)

V. If Elaine is on the steering committee, then she is on the central committee. This statement can be logically deduced from which of the following statements?
(1) All members of the central committee are on the steering committee.
(2) Elaine is on either the central committee or the steering committee.
(3) Everyone who is on the steering committee is also on the central committee.
(4) Some members of the central committee are on the steering committee.
(5) Elaine is on the steering committee.

Ans.: (3)

VI. (1) A causes B or C, but not both ,   (2) F occurs only if B occurs,
     (3) D occurs if B or C occurs,   (4) E occurs only if C occurs,
     (5) J occurs only if E or F occurs,   (6) D causes G or H or both,
     (7) H occurs if E occurs,   (8) G occurs if F occurs.

1. If A occurs, which may occur?
    I.   F and G   II. E and H   III.D
    (1) I only   (2) II only   (3) III only   (4) I & II or II & III, but not both   (5) I, II, and III

   Ans.: (4)

2. If J occurs, which must have occurred ?
    (1) E   (2) Both E and F   (3) Either B or C   (4) G   (5) Both B and C

   Ans.: (3)

Test II

TEST OF BASIC MATHEMATICS

This test is designed to examine the candidate's mathematical abilities. The sample questions given below are suggestive.

Q.1. For each set A,
    (1) $\{A\} \subset 2^A$ (2) $\{A\} \not\subset 2^A$ (3) $A \notin 2^A$ (4) $A \not\subset 2^A$ (5) None of these

   Ans.: (1)

Q.2. $\int xe^x \, dx$ is

    (1) $\dfrac{x^2}{2}e^x + xe^x$ (2) $e^x(x+1)$ (3) $e^x(x-1)$ (4) $\log x (x-1)$ (5) None of these

   Ans.: (3)

Q.3. $\lim_{x \to 0} \dfrac{e^x - 1}{x}$ is

    (1) Not defined   (2) 1   (3) −1   (4) 0   (5) None of these

   Ans.: (2)

Q.4. Given $f(x) = 2x^3 - 3x^2 - 36x - 10$, the function attains
    (1) minimum at x = 4   (2) maximum at x = 3   (3) minimum at x = – 2
    (4) maximum at x = 6   (5) None of these
Ans.: (5)

Q.5. The values of K for which the system of equations
x + y = 4
Kx + 2y + 3z = 1
2x + y + Kz = 5
does not have any solution, are
    (1) 1, 3   (2) –3, –1   (3) 3, –1   (4) 1, –3   (5) None of these
Ans.: (3)

Q.6. The mean wage and s.d. of 150 men were Rs.60 and Rs.4 per week respectively and that of another 200 men were Rs. 90 and Rs.3 per week. The s.d. of the work force of 350 men considered as one group is

    (1) 9   (2) $\dfrac{32}{7}$ (3) 15.5   (4) 21.1   (5) None of these

Ans.: (3)

Test III A
TEST OF ECONOMICS

This test is designed to examine the candidate's abilities in basic micro and macro economics. The sample questions given below are suggestive.

Q1. The Indifference relation (which captures the notion of indifference curve) is:
    (1) Asymmetric   (2) Symmetric   (3) Both (1) and (2)
    (4) Negatively transitive   (5) None of the above
Ans.: (2)

Q2. If A's utility function is $U_A(x, y) = (x^3)(y^2)$ and B's utility function is $U_B(x, y) = (x^{1/2})(y^{1/3})$, then A will always derive more happiness than B does from any combination of commodities x and y.
    (1) True   (2) Partially True   (3) False   (4) Partially False   (5) None of the above
Ans.: (3)

Q3. Calculate the cross price elasticity of demand for wheat. The wheat demand function is $q = 1200 - 9.5\,p + 16.2\,p_r + 0.2\,y$ where q is the quantity of wheat demanded in thousands of metric tons per year, p is the price of wheat in Rupees per kg, p_r is the price of rice in Rupees per kg, and y is the income of the consumers. Assume that p is initially 45 Rupees per kg, p_r is 31 Rupees per kg, and q is 1275 thousand metric tons per year.
    (1) -0.34   (2) 0.39   (3) 9.5   (4) 16.2   (5) None of the above
Ans.: (2)

Q4. Which of the following would shift the demand curve for new textbooks to the right?
    (1) A fall in the price of paper used in publishing texts.
    (2) A fall in the price of equivalent used textbooks
    (3) An increase in the number of students attending college
    (4) A fall in the price of textbooks
    (5) None of the above.
Ans.: (3)

Q5. Which of the following statement(s) is/are **false** with respect to the multiplier for investment and govt. purchases?
a.   With lump sum taxes the balanced budget multiplier is one.
b.   If tax revenue is made a function of income then the multiplier for govt. purchases g falls as compared to the case where tax are assumed to be lump sum.
c.   If tax revenue is made a function of income then the multiplier for planned investment rises as compared to the case where tax are assumed to be lump sum.
    (1) a ,b and c   (2) a and b   (3) a and c   (4) a   (5) c
Ans.: (5)

Q6. The LM curve is the set of combinations of _____ such that _____.

(1) interest rates and real money balances, real income equals real money balances times (1/r), where r is the rate of interest.

(2) interest rates and real money balances, the money supply is equal to money demand

(3) real income and real money balances, the production of output is equal to output demanded

(4) real income and interest rates, the production of output is equal to output demanded

(5) real income and interest rates, the money supply is equal to money demanded

Ans.: (5)

OR

Test IIIB

Test of Advanced Mathematics

This test is designed to examine the candidate's abilities in advanced level mathematics. The sample questions given below are suggestive.

Q1. A ray of light coming from the point (1,2) is reflected at a point 'A' on the x axis and then passes through the point (5,3) . The coordinates of the point 'A' are

(1) $\left(\dfrac{13}{5},0\right)$　　　(2) $\left(\dfrac{5}{13},0\right)$　　　(3) $\left(\dfrac{3}{5},0\right)$　　　(4) (-7, 0)　　　(5) None of the above

Ans.: (1)

Q2. If $x = \sin\left(\dfrac{2\pi}{7}\right) + \sin\left(\dfrac{4\pi}{7}\right) + \sin\left(\dfrac{8\pi}{7}\right)$ and $y = \cos\left(\dfrac{2\pi}{7}\right) + \cos\left(\dfrac{4\pi}{7}\right) + \cos\left(\dfrac{8\pi}{7}\right)$

then $x^2 + y^2$ is

(1) 2　　　(2) 3　　　(3) 4　　　(4) 1　　　(5) None of the above

Ans.: (1)

Q3. Evaluate $\int e^x \dfrac{1+\sin x}{1+\cos x}\, dx$

(1) $e^x\sec^2 \dfrac{x}{2} + c$　　(2) $e^x\tan^2 \dfrac{x}{2} + c$　　(3) $e^x\tan x + c$　　(4) $e^x\tan \dfrac{x}{2} + c$　　(5) None of the above

Ans.: (4)

Q4. The particular solution of the equation $\dfrac{d^2y}{dx^2} + \dfrac{dy}{dx} + 2y = e^x$ is

(1) e^x　　　(2) $\dfrac{1}{4}\, e^x$　　　(3) e^{4x}　　　(4) $e^{\frac{x}{4}}$　　　(5) None of the above

Ans.: (2)

Q5. Laplace Transform of cos at is

(1) $s^2 + a^2$　　(2) $\dfrac{a}{s^2 + a^2}$　　(3) $\dfrac{s}{s^2 + a^2}$　　(4) $\dfrac{1}{s + a}$　　(5) None of the above

Ans.: (3)

Q6. Evaluate $\iint xy\, dx\, dy$ taken over the positive quadrant of the circle $x^2 + y^2 = a^2$

(1) a^2　　(2) $\dfrac{a^4}{2}$　　(3) $\dfrac{a^2}{8}$　　(4) $\dfrac{a^4}{8}$　　(5) None of the above

Ans.: (4)