INDIRA GANDHI INSTITUTE OF DEVELOPMENT RESEARCH (I. G. I. D. R.)

Written Examination for Admission to M. Sc./M.Phil./Ph.D. Programme

INTRODUCTION

1. This booklet contains details pertaining to various aspects of the examination you are going to take and important instructions about the related matters. **The assessment of answersheets will be done by a computerised machine; hence you should carefully read instructions regarding handling of the answersheet and the method of marking answers.** You are advised to study this booklet carefully as it will help you in preparing yourself for the examination.

2. Before appearing for the written 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.

3. **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 up your best efforts in the examination.**

THE WRITTEN EXAMINATION

The written examination will comprise two multiple choice objective tests as shown below.

Sr.	Test	Questions	Time
I.	Comprehension, Reasoning and Analytical Ability	1 – 100	90 Min.
II.	Mathematics	101 – 150	90 Min.

Please note that each test is separately timed. You are not supposed to utilise the time saved on one test to solve the questions from the other test. There will be a separate answersheet for indicating your answers.

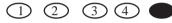A specimen answersheet is provided at the end of this handout.

MARKING OF ANSWERS

How to show your answer : Each question is followed by answers which are numbered 1, 2, 3, 4 and 5. Select the most appropriate answer. Then by using HB Pencil blacken the oval bearing the correct answer number against the serial number of the question. For example, if the answer to Question Number 2 is answer number 5, it is shown as follows

2. ① ② ③ ④ ⬤

Please note that the oval should be dark enough and should be filled in as completely as possible. You need not make special efforts to darken any oval artistically.

How to change your answer : If you wish **to change** your answer ERASE **completely** the already darkened oval by using good quality eraser and then blacken the new oval bearing your revised answer number. While changing the answer, **erasing** the earlier answer **completely is extremely essential. If it is not erased completely, smudges will be left on the erased oval as shown below and the question will be read as having two answers and will be ignored for giving any credit.**

① ② ◉ ④ ⬤

(Smudge left in oval no. 3 due to bad eraser and the fresh answer in oval no. 5 will be read as two answers 3 & 5 and therefore no credit will be given even if the answer no. 5 happens to be the correct answer.)

GENERAL INSTRUCTIONS

1. **Particulars to be noted :** Please note carefully your Roll Number, date, time and venue for the examination given in the call letter. Please also note that this call letter does not constitute an offer of admission.

2. **Punctuality in attendance :** You should be present at the examination hall at the time given in the call letter. Candidates arriving late will not be permitted to enter the Examination Hall.

3. **Call letter to be surrendered :** You should bring your call letter with you, when you come to the venue for the examination, with a recent passport size photograph of yourself, firmly affixed in the space provided for it. You will be required to sign in the space provided for candidate's signature on your call letter in the presence of the invigilator in the examination hall. If you come to the examination hall without the call letter or without the photograph affixed on it, you will not be permitted to appear for the examination. You should hand over your call letter to the invigilator in the examination hall, when he collects the call letters from the candidates.

4. **Compliance with instructions :** You should scrupulously follow the instructions given by test administrators and the invigilators at the examination venue at all the stages of the examination. If you violate the instructions you will be disqualified and may also be asked to leave the examination hall.

5. **Use of calculators, books, notes and copying or receiving/giving assistance not allowed :** No calculator, separate or with watch, books, note-books

or written notes and cell phones will be allowed inside the examination hall. Any candidate who is found either copying or receiving or giving assistance will be disqualified.

6. **Sample answersheet and how to fill information on it :** A sample answersheet is attached to this booklet. Fill in the required biodata and other information on this answersheet for your practice and bring it with you to the examination hall. You will get a similar answersheet in the examination hall, on which you will have to copy the biodata and other information already filled in by you on the sample answersheet. How to fill in the information on the answersheet is explained later in this handout.

7. **Use of HB pencil and ball pen :** You are required to fill in the information on the answersheet which you will get in the examination hall, by HB pencil and ball-point pen. You are required to **mark your answers by the HB pencil**. Therefore, you should bring with you **two HB pencils, a good quality eraser, a sharpener and a ball-point pen.** You are advised to bring two pencils to avoid mending a pencil during the examination as you may lose time.

8. **Handling answersheet : Please handle your answersheet with extreme care and keep it dust-free. If it is mutilated, torn, folded, wrinkled or rolled, it may not be valued.**

Answersheets and question papers will be supplied by IGIDR. After the test is over, **you should hand over both the answersheet and question paper to the invigilator** before leaving the room. Any candidate

who does not return the question booklet and/or answersheet or is found to attempt to take or pass on the question booklet or answersheet inside or outside the examination hall will be disqualified and IGIDR may take further action against him/her as per rules of IGIDR.

9. **Rough work to be done on the booklet :** You are advised to do all the necessary rough work on test booklet/question paper itself. You **SHOULD NOT** do your rough work on the answersheet or on any other paper. If any rough work is done on the answersheet, your answersheet will not be assessed.

10. **One single answersheet :** For all objective tests there will be a single answersheet.

11. **Method of showing answers :** All your answers must be marked in the answersheet only. The method of indicating answers as described and illustrated must be followed. If this is not done the answersheet will not be assessed by the computerised machine.

12. **Write roll no. on the test booklet :** You should write your Roll No. in the space provided on the cover page of the test booklet. If you do not write your Roll No. on the test booklet your answersheet will not be assessed.

13. **Information on the answersheet :** You should write all the information required on the answersheet such as Roll No., Name, Test Form No., etc. If you do not write your Roll No., Name and Test Form No. etc. your answersheet will not be assessed.

SIDE – 1

Use ball pen for filling up information in boxes in 1 to 11.

(Box No. 1) Full name of the candidate : You have to write in **CAPITALS** your full name in **English** as given in the call letter.

(Boxes Nos. 2 to 5) Other information : You will find that the information asked for in the boxes from 2 to 5 can be filled in easily. Fill in this information by using ball-point pen.

(Box No. 6) Post : Write the name of discipline of your study as explained in box no. 15.

(Box No. 7) Category : Write the name of the programme for which you have applied as explained in Box No.16.

(Boxes No. 8-10) Test booklet serial No., test battery no. and test form no. All these Nos. are printed on the cover page of test booklet, which you will receive at the time of the examination. You have to copy these numbers on your answersheet, using ball point pen.

(Box No. 11) Candidate's signature : You should sign in the space provided. Your signatures on the application form, call letter and answersheet should be identical.

(Box No. 12) Invigilator's signature : Invigilator will sign in Box No.12 in the examination hall.

(Box No. 13) : Name of the candidate : There is a row of 10 boxes for writing the name. Just below each box you will find a column of 26 ovals each containing a letter of the alphabet. The top oval in each contains a letter 'A' whereas the last oval bears 'Z'. Write your name in CAPITALS by entering one letter in each box using HB pencil and blacken the appropriate oval under each box. **If your name contains more letters write only the first**

letters which you can accommodate in the Boxes provided. Begin writing your name as given in the call letter.

(Box No. 14) : Roll number You will be assigned an eight digit Roll Number. There is a row of 8 boxes provided to write the Roll Number. Just below each box there are 10 ovals numbered from 1 to 9 and 0. Enter one digit in each box and also blacken the appropriate oval under each box by using HB Pencil.

NOTE : DO NOT MAKE ANY CHANGE in your Roll No. on your own.

(Box No. 15) Post applied : Darken the oval corresponding to the discipline of your study for the last qualifying degree as follows :

Discipline	Code	Discipline	Code
Economics	1	Engineering	2
Science	3	Others	4

(Box No. 16) Category : Darken the oval corresponding to the programme for which you have applied as follows :

Programme	Code
M.Sc.	1
M.Phil./Ph.D.	2

(Box No. 17) Test Form No. : Write and darken the appropriate ovals of the test form no. of the test booklet you will receive.

(Box No. 18) Language & (Box No. 19) FOR OFFICE USE : May be kept blank.

(Box No. 20) Date of birth : Please remember that if the date and the month are single digit numbers they are to be prefixed by zero.

(Box No. 21) Discipline : Under discipline the candidate has to indicate his faculty of study viz. Arts, Commerce,

Agriculture, Science, Engineering/Technology, Management. If the faculty studied by you is other than these, then indicate as 'Others'. Indicate the faculty studied by you and leave other faculties blank.

(Box No. 22) Medium of instruction : In this box, the information about medium of instruction at various levels of study, viz. SSC (X Std.), HSC (XII Std.) Graduation (DEG) and Post Graduation (PG) is to be indicated. The language codes are English - 11, Hindi - 12 & Other languages -23

(Box No. 23) Percentage of marks : In this box percentage of marks obtained at each level of examination (rounded off to two digits) is to be indicated. In case grades are given, convert the same into equivalent percentages and indicate as above.

(Box No. 24) Place of school & college : In this box, the candidate has to indicate, by blackening the appropriate oval, his place of study (Village, Tehsil, District, State Capital, Metropolis) for each level of examination (SSC, HSC, Degree, Post Graduation).

(Box No. 25) Annual family income : You should blacken the appropriate oval.

(Box No. 26) Parental education : In this box the column 1 indicates level of education, column 2 and 3 indicate father's and mother's education respectively. You should blacken the appropriate ovals correctly.

(Box No. 27) Religion : In this box indicate your religion by darkening the appropriate oval using HB pencil.

(Box No. 28) Sex : You should blacken the appropriate oval correctly.

SIDE – 2

1. You have to mark all your **answers** on side 2 by HB pencil only.

2. You have to write your Roll Number on Side 2 also, (Box No.29) at the bottom left hand corner in the space provided using HB Pencil.

SAMPLE QUESTIONS
Test I
Test of Comprehension, Reasoning and Analytical Ability

This test of Comprehension, Reasoning & Analytical Ability will be of 90 minutes duration.

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

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 examples, 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.

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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. 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)

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

Ans. : (2)

III. 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)

IV (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 Mathematics

The test of mathematics will be of 90 minutes duration. 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 the above

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 the above

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

(1) Not defined   (2) 1   (3) -1
(4) 0   (5) None of the above

Q.4. The slope of $f(x) = 5\sqrt{x} - \dfrac{\log x}{3}$ is

(1) $\dfrac{5}{\sqrt{x}} - \dfrac{1}{3x}$ (2) $\dfrac{5}{2}x^{\frac{3}{2}} - \dfrac{e^x}{3}$

(3) $\dfrac{5}{2\sqrt{x}} - \dfrac{1}{3x}$ (4) $10\,x^{\frac{3}{2}} - \dfrac{1}{3x}$
(5) None of the above

Q.5. 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 the above

Q.6. If $\dfrac{5x + 2}{(1 + 3x)(1 + 2x)} = \dfrac{A}{1 + 3x} + \dfrac{B}{1 + 2x}$,

then
(1) $A = 1, B = -1$ (2) $A = -1, B = 1$
(3) $A = 2, B = 0$ (4) $A = B = 1$
(5) None of the above

Q.7. $x + \dfrac{1}{2}x^2 + \dfrac{1}{3}x^3 + \ldots\ldots$ is

(1) $\log(1 - x)$ (2) $\log\dfrac{1}{1 - x}$

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

Q.8. 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 the above

Q.9. $\begin{vmatrix} 1 & 1 & 1 \\ 1 & 1+a & 1 \\ 1 & 1 & 1+b \end{vmatrix} =$

(1) 0   (2) $(1+a)(1+b)$ (3) ab
(4) 1   (5) None of the above

Q.10. When the mean of a binomial distribution is 12 and the s.d. is 3, the probability of success, p is

(1) $\dfrac{3}{4}$ (2) $\dfrac{1}{4}$ (3) $\dfrac{1}{2}$

(4) $\dfrac{1}{8}$ (5) None of the above

Q.11. 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 the above

Q.12. A candidate is selected for interview for three posts. For the first post there are 3 candidates, for the second there are 4 candidates and for the third there are 2. The chance of him getting at least one post is

(1) 0.75   (2) $\dfrac{1}{24}$ (3) $\dfrac{1}{8}$

(4) 0.25   (5) None of the above

ANSWERS

1. (1),   2.(3),   3. (2),   4. (3)   5. (5),   6. (4),
7 (2),   8 (3),   9. (3),   10. (2),   11. (3),   12. (1)

नीचे दिये गये खाना क्र. 1 से 12 में सभी जानकारी वाल प्वाईंट पेन से लिखिये तथा खाना क्र. 13 से आगे **HB** पेंसिल से ही लिखिये ।
In the boxes 1 to 12 below enter all the information by ball point pen and from 13 onwards by HB pencil only.

उत्तर पत्र – 97
ANSWER SHEET-97
पृष्ठ – 1   SIDE-1

1. बुलावा पत्र के अनुसार परीक्षार्थी का नाम अंग्रेजी के बड़े अक्षरों में / Candidate's name in English in CAPITAL letters (as it appears in the Call-letter)

2. परीक्षा दिनांक   DATE OF EXAM
3. बोर्ड/संस्था   BOARD/ORGANISATION
4. परीक्षा केन्द्र   CENTRE OF EXAM
5. परीक्षार्थी क्रमांक   ROLL NO.

6. एच कोड   POST CODE(S)
7. वर्ग का नाम   CATEGORY NAME
8. प्रश्नपुस्तिका अनुक्रमांक   TEST BOOKLET SERIAL NO.
9. प्रश्नमालिका क्रमांक   TEST BATTERY NUMBER
10. प्रश्न क्रमांक   TEST FORM NUMBER

उत्तर देने की पद्धति
METHOD OF MARKING ANSWER

केवल कार्यालय उपयोग हेतु
FOR OFFICE USE ONLY

परीक्षार्थी के हस्ताक्षर
CANDIDATE'S SIGNATURE

पर्यवेक्षक के हस्ताक्षर
INVIGILATOR'S SIGNATURE

INSTRUCTIONS TO THE CANDIDATES

13. परीक्षार्थी का नाम : खाना क्र. 1 के पहले दस अक्षर / CANDIDATE'S NAME : FIRST TEN LETTERS OF BOX NO. 1
14. परीक्षार्थी क्रमांक   CANDIDATE'S ROLL NO.
15. पद   POST
16. वर्ग   CATEGORY
17. प्रश्न क्रमांक   TEST FORM NO.
18. प्रश्नावलियों के किस भाषाभाग का उपयोग किया   VERSION OF THE TESTS USED
19. कार्यालय उपयोग हेतु   OFFICE USE ONLY

DARKEN ONLY ONE OVAL FOR EVERY TEST

TEST	हिंदी HINDI	अंग्रेजी ENGLISH
I		
II		
III		
IV		
V		
VI		

20. जन्म दिनांक   DATE OF BIRTH
दिनांक DATE | माह MONTH | जन्म YEAR*

21. अध्ययन/शाखा   DISCIPLINE/FACULTY
कला ARTS
वाणिज्य COMMERCE
कृषि AGRI.
विज्ञान SCIENCE
अभियांत्रिकी/प्रौद्योगिकी ENGG./TECH.
प्रबंधन MGMT.
अन्य OTHERS

22. शिक्षा का माध्यम   MEDIUM OF INSTRUCTION
माध्यमिक SSC | उमाध्य HSC | स्नातक DEGREE | स्नातकोत्तर PG

23. अंकों का प्रतिशत   PERCENT OF MARKS
माध्यमिक SSC | उमाध्य HSC | स्नातक DG | स्नातकोत्तर PG

24. विद्यालय/महाविद्यालय का स्थान   PLACE OF SCHOOL/COLLEGE
SSC HSC DG PG
ग्राम VILLAGE
तहसील मुख्यालय TEHSIL H.Q.
जिला मुख्यालय DISTRICT H.Q.
राज्य की राजधानी STATE CAPITAL
महानगरी METROPOLIS

25. परिवार की वार्षिक आय रु. में   ANNUAL FAMILY INCOME IN Rs.
6,000 से कम   BELOW 6,000
6,001 - 12,000
12,001 - 20,000
20,001 - 30,000
30,001 और अधिक   30,001 & ABOVE

26. माता पिता की शिक्षा   PARENTAL EDUCATION
पिता FATHER | माता MOTHER
अनपढ़ ILLITERATE
प्राथमिक PRIMARY (I-IV STD PASS)
पूर्व माध्यमिक MIDDLE (VII STD PASS)
माध्यमिक SSC (X STD PASS)
उच्च माध्यमिक HSC (XII STD PASS)
स्नातक GRADUATE
स्नातकोत्तर POST GRADUATE

27. आप का संप्रदाय   YOUR RELIGION
हिंदू HINDU
मुस्लिम MUSLIM
सिख SIKH
इसाई CHRISTIAN
पारसी ZOROASTRIAN
यहूदी JEW
नवबौद्ध NEO BUDDHIST
अन्य OTHERS

28. लिंग   SEX
पुरुष MALE
स्त्री FEMALE

"WRITE THE LAST TWO DIGITS OF THE YEAR, e.g. FOR YEAR 1997 WRITE 97."

AK 809

IMPORTANT NOTE

Bring two HB Pencils, a ball pen and an eraser on the day of examination.

Bring your call letter with your recent photograph affixed on it. Without these documents you are not permitted to appear in the examination.

Use of calculator is **NOT** allowed.

Before appearing ensure that you fulfil the eligibility criteria in all respects.

पृष्ठ 2   SIDE 2

सभी उत्तर **HB** पेंसिल द्वारा ही अंकित कीजिये.   MARK ALL THE ANSWERS BY HB PENCIL ONLY

FOR OFFICE USE ONLY

Write your Roll No. in this box

TOTAL