Downloaded Application should be sent along with a DD for ₹500/- towards Cost of Application

SI.No.

Time & Date 10.00 am to 12.30 pm 25-08-2019

| H.T.No. | |
|----------|--|
| H. I.NO. | |

to be filled in by Office



ANDHRA UNIVERSITY: VISAKHAPATNAM SCHOOL OF DISTANCE EDUCATION

Price: ₹500/-(including Regn. & Test Fee)

APPLICATION FORM FOR ENTRANCE TEST FOR ADMISSION Into Three Year and Two Year MBA / (Marketing / Finance / HRM) / Three Year MBA (Hospital Administration) & MCA PROGRAMME

2019-2020

Latest Passport size Photograph to be affixed and duly attested by Gazetted Officer

Note: The applicant should go through instruction book-let first and then fill in the form in his/her handwriting in English.

Examination Centre: Srikakulam/Visakhapatnam/Kakinada/Gajuwaka/Rajahmundry/Vijayawada/Hyderabad

| 1 | Name of the Applicant in full | Surname | | | |
|---|-------------------------------|---------|--|--|--|

(Please tick the examination centre)

| 1. | | Surname | 9 | | | | | | | | | | 01. Male | 1 - | 2. nale |
|----|--------------------------------|---------|------|----|---|------|---|-----|-------|-----|------|------|-------------|-----|------------|
| | (IN BLOCK LETTERS) | Name | | | | | | | | | | | | | |
| 2. | Name of the Parent / Husband: | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| 3. | Address for Communication | | | | | | | | | | | | | | |
| | (IN BLOCK LETTERS) | | | | | | | | | | Pin | | | | |
| 4. | Date of Brith : | | | | | | T | | | | | | | | |
| | (Enclose attested Certificate) | Day | Mont | :h | Υ | 'ear | | Cel | l No | . : | | | | | |
| | • | | | | | | | e-m | ail ' | | | | | | |

5. Do you claim reservation under any one or more of the following categories? If so, put tick mark (✓) in the appropriate box.

| SC 01 | ST 02 | BC-A 03 | BC-B 04 | BC-C 05 | BC-D 06 | OBC 07 | NCC 08 | NSS/AES 09 | SPORTS 10 | PH 11 | DEFENCE 12 | WOMEN 13 | ANYOTHER SPECIFY 14 |
|----------|----------|------------|------------|------------|------------|-----------|-----------|---------------|--------------|----------|---------------|-------------|------------------------|
| | | | | | | | | | | | | | |
| Encl | ose X | erox co | pies of | Certifica | ates in s | support | of the a | above claim | | | | | |

| 6. | Details of Qualifying Examination | ſ |
|----|-----------------------------------|---|
| | Passed. | ļ |

Name of the Examination Year of Passing Name of the University

 (\checkmark)

7. Work Experience: Supervisory / Managerial / Professional (Enclose the Service Certificate signed by the employer as per the proforma given in instruction book-let).

| Name of the Organization | Designation | Years of Service |
|--------------------------|-------------|------------------|
| | | |

I hereby declare that the particulars supplied by me are correct to the best of my knowledge and will be supported by original documents when called for. I have carefully gone through the instruction book-let and have become fully conversant with the eligibility criteria to be satisfied for appearing at the entrance test. I fully realise that the issue of Hall Ticket for the Entrance Test does not absolve me of the responsibility of satisfying the eligibility criteria for the entrance test and for admission into MBA/MCA Programme.

| Place | : | |
|-------|---|--------------------------------|
| Date | | Signature of the Applicant |

Note: Candidates who have put in 5 years of service in an organization by 01.07.2019 after graduation or those who qualifed in ICET 2019 need not appear for this test and can seek admission directly.

SERVICE CERTIFICATE

(To be signed by Head of the Department / Employer)
The certifying authority is solely responsible for any incorrect information)

| This is to certify that Sri / Sm | ıt./ Kum. | |
|--------------------------------------|-------------------------------------------------|-------------------------------|
| S/o /D/o /W/o | is working in our Office / Institution as | |
| from | to till date (Total Service. Years Mor | nthsDays |
| as on the last date of submission of | application form. His / Her Scale of pay is Rs | and his / her |
| gross salary is Rs | PM (Rupees |). |
| His / Her Services are found to be G | ood / Satisfactory during the above period. | |
| We have no objection to Sri / S | Smt. / Kum. | |
| joining in MBA / MCA Programme of | fered by School of Distance Education, Andhra U | niversity if given admission. |
| | | |
| Place : | Signature | : |
| Date: | Designation | on: |
| | Office Sea | al· |

CHECK LIST:

Enclose the following with Application form:

- Xerox Copies of Service Certificate from Head of the Department / Employer. (incase of two year MBA Programme).
- 2. Degree Certificate / Provisional Certificate of qualifying examination. (Xerox Copy Only).
- 2a. Intermediate or +2 examination certificate (in case of MCA Programme)
 - 3. S.S.C. or equivalent certificate with Date of Birth
 - 4. Xerox Copies of Caste Certificate in case of SC/ST/BC Candidates.
 - 5. Two Self-Addressed envelopes of 9" x 4" size.

Note: Original Certificates are to be produced at the time of admission.

^{*} Applicable to the candiates who are seeking admissions into two year MBA Programme.

HALL TICKET

ANDHRA UNIVERSITY VISAKHAPTANAM

SCHOOL OF DISTANCE EDUCATION

Application form for Entrance Test for Admission into
Three Year & Two Year MBA (Marketing / Finance / HRM) / Hospital Administration /
MCA Programme 2019 - 2020

| Time | e & Date : 10.00 am to 12.30 p | om 25-08-2019 | Hall Ticket No. : | |
|------|---------------------------------------------------------|--------------------------------------------------------------------|------------------------------------|-----------------------------------------------------|
| Test | Centre : Srikakulam / Visakh | apatnam /Gajuwaka / Kakina | ada / Rajahmundry / Vijayawada. | |
| | (To be filled in by the Candid | ate in his / her own handwriti | ing and to be submitted along with | the Application) |
| 1. | Name of the Candidate (IN BLOCK LETTERS) | : | | Latest Passport |
| 2. | Name of the Parent / Husbar | nd : | | · size Photograph to be affixed and |
| 3. | Identification Marks | a) | | |
| | | b) | | |
| | I do hereby attest that the ca | ndidate has signed in my pr | resence. | |
| S | Signature of the Attesting Offic with Official Stamp | er 3 | Signature of th | e Candidate |
| HA | LL TICKET | ANDHRA UN VISAKHAPI | _ | |
| | SC | CHOOL OF DISTAN | ICE EDUCATION | |
| IN | | lication form for Entran D YEAR MBA (Marketing MCA Programme | g / Finance / HRM) / Hospital | Administration |
| Time | e & Date : 10.00 am to 12.30 | om 25-08-2019 | Hall Ticket No. : | |
| Test | Centre: Srikakulam / Visakh | apatnam /Gajuwaka / Kakina | ada / Rajahmundry / Vijayawada. | |
| | (To be filled in by the candidate | ate in his / her own handwriti | ng and to be submitted along with | the application) |
| 1. | Name of the Candidate (IN BLOCK LETTERS) | : | | |
| 2. | Name of the Parent / Husbar | nd : | | 1 1 2 1 1 |
| 3. | Identification Marks | a) | | to be affixed and duly attested by Gazetted Officer |
| | | b) | | |
| | I do hereby attest that the Ca | andidate has signed in my p | resence. | |

Signature of the Attesting Officer with Official Stamp

INSTRUCTIONS TO THE CANDIDATE

- 1. Candidates are advised to be present in the test hall 15 minutes before the commencement of the test.
- 2. Candidates will not be admitted to the Entrance Test after 30 minutes of the commencement of the test. Candidates once admitted will not be allowed to leave the hall till half-an-hour before the closing time of the entrance test.
- 3. Hall Ticket shall be produced at the gate of the test centre and also in the hall at the time of the test, failing which the candidate will not be allowed to appear for the Entrance test.
- 4. **PLEASE NOTE**: YOUR SCRIPT WILL NOT BE VALUED IF YOU WRITE ANY IRRELEVANT MATTER OR SYMBOLS, INCLUDING RELIGIOUS MARKS AND SYMBOLS, PRAYERS OR ANY COMMUNICATION WHATSOEVER, ANYWHERE, EITHER ON THE COVER SHEET OR INSIDE THE SCRIPT.
- 5. ANSWER MUST BE WRITTEN IN BLUE/BLACK INK FOUNTAIN OR BALL PEN ONLY (SKETCH PEN, PENCIL OR INK OR ANY OTHER COLOUR IS NOT ALLOWED)
- 6. HALL TICKET MUST BE PRESERVED TILL THE TIME OF ADMISSION OF THE COURSE.
- 7. No. T.A. and D.A. will be paid for any journey undertaken by the candidate for the Entrance test.
- 8. Adoption of any kind of unfair means at the time of Test or any act of impersonation will result in invalidation of his / her script and forfeiture of his / her claim for taking the Test besides criminal action as per law. Decision of the Chief Superintendent of the Test Centre shall be final on these matters.
- 9. Issue of Hall Ticket appearance at the test, does not automatically entitle a candidate for admission.
- 10. Calculators or any other aids are not allowed in the Test Hall.
- 11. Any rough work is to be done only on the blank sheet provided for the purpose in the Test Booklet.
- 12. Attestation on the Application Form and Hall Tickets can be made by any Gazetted Officer / Principal of a College / A University Professor.
- 13. Each question will have four alternative choices with one correct / appropriate answer. Candidate has to choose correct / appropriate answer and has to write its number in the relevant question number box on the answer sheet. If any alteration is to be made, strike off the previous one and write the correct number neatly in the box.

(Cell Phones are strictly prohibited in the Examination Hall)
Answers with overwriting will be ignored while awarding marks.

4

INSTRUCTIONS TO THE CANDIDATE

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(Cell Phones are strictly prohibited in the Examination Hall)
Answers with overwriting will be ignored while awarding marks.



ANDHRA UNIVERSITY

SCHOOL OF DISTANCE EDUCATION

Time & Date 10-00 am to 12-30 pm 25-08-2019

VISAKHAPATNAM 530 003 : ANDHRA PRADESH

MBA (Marketing / Finance / HRM) / MCA / MBA (Hospital Administration)

TEST INSTRUCTIONS BOOK-LET

Last date for receipt of filled in application form: 07-08-2019 Upto 5-00 p.m

Eligibility for appearing the Test:

A) 3 - Year MBA:

- a) Marketing Managament
- b) Finance Management
- c) Human Resource Management
- d) Hospital Administration

B) 2 - Year MBA:

- a) Marketing Management
- b) Finance Management
- c) Human Resource Management

Any Graduate of Andhra University or any other University recognised by Andhra University as equivalent there to, with 50 per cent marks (SC/ST Candidates with 45% marks) is eligible. The Candidates, with professional qualification like BE./B.Tech./ B.Pharm. / Medicine / CA / ICWA / CS / AMIE /AIETE, etc. are also eligible.

Any graduate hra University or any other University recognised by Andhra University as equivalent there to with 50 per cent marks (SC / ST Candidates with 45% Marks) is eligible. The candidates with professional qualification like BE / B.Tech. / B.Pharm. / Medicine / CA / ICWA / CS / AMIE / AIETE, etc.are also eligible.

Besides the above, the candidates, who have 2 years in - service experience in an organization, after graduation, as on 1st July, 2019 can seek admission in 2 - year MBA course (Marketing / Finance / HRM).

Note: Candidates, who qualified in ICET - 2019 or the Candidates, who completed 5 years of service by 1st July, 2019 after graduation in the respective fields, need not appear for Entrance Examination and can seek admission directly.

C) MCA:

- i) Educational Qualification: Candidates should have passed Bachelor's Degree in any faculty, of Andhra University or any other University recognised by Andhra University as equivalent there to, with 50% marks (SC / ST Candidates with 45% marks) besides passing Intermediate or +2 examination with Maths as one of the subjects of study.
- ii) The Course of Study for MCA Programme shall extend over a period of three Academic Years. However in case of candidates with PGDC PA of AU, the study period is two years.

: ₹ 500/-

Note: Candidates, who Qualified in ICET - 2019 need not appear for Entrance Examination and can seek admission directly.

II. Schedule of dates:

a) Availability of application forms on AU Website
b) Last date for receipt of filled in application form
c) Last date for receipt of filled in application form
differentiation form
in 16-08-2019
in

d) Date and time of Entrance Test : 10.00 am to 12.30 pm. 25-08-2019 (Sunday)

III. Cost of application form for Entrance Test

(Inclusive of registration and test fee)

Application must be affixed with an attested passport size photograph taken after 01.01.2019. Candidates indulging in impersonation are liable for prosecution inviting a punishment of imprisonment of 3 to 7 years with or without fine ranging from Rs.5000/- to Rs.20,000/-.

IV. Medium of Test: English only

Hall-tickets will be issued to candidates in person one day before the commencement of the eamination at the respective centres.

Examination Centres:

- 1) Govt. Arts College for Men, Srikakulam
- 2) School of Distance Education, A.U. Campus, Visakhapatnam.
- 3) TSR & TBK Degree College, Gajuwaka, Visakhapatnam.
- 4) AKNU MSN PG Centre, Kakinada
- 5) Govt. Arts College, Rajahmundry
- 6) Syed Appalaswamy Degree College, Vijayawada.

The number of seats are limited. Rule of reservation will be followed as per the norms of the University. Rank obtained in the test will be valid for admission into MBA (Marketing / Finance / HRM / Hospital Administration) / MCA course offered by the School of Distance Education, Andhra University for the academic year 2019-2020 only.

^{*}Candidates can also download the application form from our *website:* WWW.andhrauniversity.edu.in.

However they have to pay Rs. 500/- by way of DD drawn in favour of The Registrar A.U. towards cost of application form along with the application.

INFORMATION ABOUT THE TEST

General Information: The test is designed to measure the candidate's ability to think systematically, to employ the verbal and mathematical skills and to assess his/her aptitude for admission into MBA / MCA Programme. The Test emphasies accuracy. Therefore, the candidate is required to go through the instructions carefully. This is an objective type test and the questions are of multiple choice. Out of the given options, the candidate has to choose the correct answer. If the Candidate gives more than one answer to any question, such answers will be ignored while awarding marks.

PATTERN OF THE TEST: The test consists of 200 questions of 1 mark each in the following topics:

| Section | n-A : Analytical Ability | No. of Questions | |
|-----------|------------------------------------|------------------|---------------------------|
| i. ii. | Problem Solving Data Sufficiency | 55 20 | |
| Section | n-B : Mathematical Ability | | |
| i. | Arithmetical Ability | 35 | |
| ii. | Algebrical and Geometrical Ability | 30 | DURATION OF THE TEST: |
| iii. | Statistical Ability | 10 | 2 1/2 HOURS (150 MINUTES) |
| Section | n-C : Communication Ability | • | |
| i. | Vocabulary | 10 | |
| ii. | Business and Computer Technology | 10 | |
| iii. | Functional Grammer | 15 | |
| iv. | Reading Comprehension | 15 | |
| | Total | 200 | |

Important Instructions to Candidates:

- 1. Candidates are directed to carry to the examination hall the following:
 - a) Ball Point Pen (Blue or Black)
 - b) One or Two HB Pencils
 - c) Eraser (Rubber) and
 - d) Sharpener.
- 2. Besides the items listed above, the candidate should not bring any other material including the instructions booklet into examination hall. Candidates should not bring Papers, Cell Phones etc., into the examination hall. Any candidate found in possession of any forbidden material, will be sent out of the examination hall.
- Candidates must remain seated in their alloted places till the completion of the examination. In no
 case they will be allowed to leave the examination hall till the end of the examination. Before leaving
 the examination hall, the candidates must return to the invigilator both the question paper booklet and
 the Answer Sheet.
- 4. Every candidate appearing for Entrance Test shall be provided with a specially designed return answer sheet on which the candidate has to mark the answers and other relevant data. The method of marking the answers is illustrated in this section.
- 5. Candidates shall read carefully the instructions before starting to answer the questions.
- 6. The question paper booklet given to the candidate shall consist of 200 multiple choice type questions in three different sections with four responses given to each question, out of which only one response is correct for the given question. Candidates shall mark the correct answer in answer sheet.

SYLLABUS AND MODEL QUESTION PAPERS

Section - A: Analytical Ability: 75 Questions (75 Marks)

1. Data Sufficiency: 20 Questions (20 Marks)

A question is given followed by data in the form of two statements labelled as I and II. If the data given in I alone is sufficient to answer the question then choice (1) is the correct answer. If the data given in II alone is sufficient to answer the question choice (2) is the correct answer. If both I and II put together are sufficient to answer the question but neither statement alone sufficient, then choice (3) is the correct answer. If both I and II put together are not sufficient to answer the question additional data is needed, then choice (4) is the correct answer.

Problem Solving 55: Questions (55 Marks)

(a) Sequences and Series 25: Questions (25 Marks)

Analogies of numbers and alphabets, completion of blank spaces following the pattern in a:b: :c:d relationship; odd thing out: missing number in a sequence or a series.

(b) Data Analysis: 10 Questions (10 Marks)

The data given in a Table, Graph, Bar diagram, Pie Chart, Venn Diagram or a passage is to be analysed and the questions pertaining to the data are to be answered.

Coding and Decoding Problems 10 : Questions (10 Marks)

A code pattern of English Alphabet is given. A given word or a group of letters are to be coded or decoded based on the given code or codes.

Date, Time & Arrangement Problems: 10 Questions (10 Marks)

Calender problems, Clock Problems, blood relationships, arrivals, departures and schedules: seating arrangements, symbol notation interpretation.

Section - B: Mathematical Ability: 75 Questions (75 Marks)

I. Arithmetical Ability: 35 Questions (35 Marks)

Laws of indices, ratio and proportion; surds; numbers and divisibility, 1.c.m. and g.c.d; Rational numbers,; Ordering; Percent Profit and loss; Partnerships, Pipes and cistems, time, distance and work problems, areas, and volumes, mensuration, Modular Arithmetical.

II. Algebrical and Geometrical Ability: 30 Questions (30 Marks)

Statements, Truth tables, implication, converse and inverse, Tautologies-Sets, Relations and functions, applications, Equation line in different forms. Trignometry - Trigonometric ratios, Trigonometric ratios of standard angles (0°,30°,45°,60°,90°) Trignometric identities: simple problems on heights and distances Polynomials; Remainder theorem and consequences; equations and expressions; Progressions, Binomal Theorem, Matrices, Notion of a limit and derivative Plane geometry. Triangles, Quadrilaterals, Circles, Coordinate geometry-distance between points and

III. Statistical Ability: 10 Questions (10 Marks)

Frequency distributions, Mean, Median, Mode, Standard Deviation, Correlation, Simple Problems on Probability

Section-C: Communication Ability: 50 Questions (50 Marks)

Objectives of the Test:

Candidates will be assessed on their abiltiy to

- 1. Identify vocabulary used in the day-to-day communication.
- 2. Understand the functional use of grammer in day-to-day communication as well as in the business contexts.
- 3. Identify the basic terminology and concepts in computer and business contexts (letters, reports, memoranda, agenda, minutes etc.)
- 4. Understand written text and drawing inferences.

Part 1: Vocabulary 10Q (10 M)

Part 2: Business and computer terminology 10Q (10 M)

Part 3: Functional Grammer

Part 4: Reading Comprehension (3 Passages) 15Q (15 M)

MBA / MCA ENTRANCE TEST -

MODEL QUESTION PAPER

Time: 150 Minutes

Max. Marks: 200

SECTION - I ANALYTICAL ABILITY

Marks: 75

Directions for questions 1 to 20:

Each question is followed by two statements I and II. Asnwer the question using the following instructions.

- Marks choice: 1. If the question can be answered by the statement I alone.
 - 2. If the statement II alone is sufficient to answer the question.
 - 3. If both the statements I and II are sufficient to answer the quesetion, but neither of them alone is not sufficient.
 - 4. If both the statements I and II together are not sufficient to answer the question and additional data is required.
- 1. Are X, Y and Z rational numbers?
 - I. X > Y
 - II. X > Z
- 2. Is a house site in the shape of a square?
 - I. Its area is 1225 sq.m.
 - II. Perimeter < area.
- 3. What is $(A \cup B)^1$?
 - I. $A = \{1, 2, 3, 4, 5\}$
 - II. $B' = \{2, 4, 5, 6, 8\}$
- 4. Is A = B?
 - I. BoA
 - II. $B \subset A$
- 5. The two lines are parallel
 - I. They have different intercepts
 - II. Distance between the intercepts is 1 unit
- 6. In how many days A and B together can do a work?
 - I. A can do a work in 12 days
 - II. B can do a work in 24 days
- 7. Is number of men engaged in a work inverse proportion?
 - I. Ages of them
 - II. Time they take to finish it.

- 8. Two trains start simultaneously at stations B and A and travel on parallel lines. Do they meet between A and B?
 - I. Train from station B travels with a speed of 35 km.
 - II. Train from station A travels with a speed of 55 km.
- 9. What is the sum of money a person has to pay?
 - I. A person borrows Rs. 6,250.
 - II. The compound interest is 12%.
- 10. Can a cube of any odd number is even?
 - I. Prime factorization of the number
 - II. Add consecutive odd numbers to the number
- 11. What is profit percentage?
 - I. A profit of Rs. 300 on a cost price of Rs. 3,000
 - II. Sale price is Rs. 3,300.
- 12. What is the quadratic equation?
 - I. Sum of the roots is one-half of the product of the roots and the product of the roots is 18.
 - II. The discriminant is 16.
- 13. Is the value of x unique?
 - I. x is a negative integer
 - II. $x^3 8 = 0$
- 14. Are the two lines perpendicular.
 - I. Both the lines pass through origin (0, 0)
 - II. The product of their slopes is -1.
- 15. Are m,n rational numbers?
 - $I. \qquad m\sqrt{n\sqrt{a}} = mn\sqrt{a}$
 - II. $n.a^{-m} = \frac{n}{a^m}$
- 16. What is the value of x?
 - I. $2^{x+y} = 4^x$
 - II. $2^{x+3} = 4^{x+1}$
- 17. For real numbers a,b is a > b?
 - I. $a^2 b^2 > 0$
 - II. b > 0

- 18. If a, b are positive integers, is a + b a prime number?
 - I. a,b are odd
 - II. a = 2b
- 19. Is the triangle ABC right angled?
 - |B=2|C
 - II. $\underline{C} = \frac{2}{3} \underline{A}$
- 20. What is the volume of the cylinder?
 - The height of the cylinder is 12 cm.
 - The area of its base is 106 sq.cm.
- Odd things out, Sequences and Series.
- 21. (1)Ear
 - (3)

(2)Hand

Leg

(4)Heart

- 22. (1)1964
 - (3)1976

(2)1968

(4)1975

- 23. (1)TSVU
 - (3)IJLK

(2)OPRQ

(4)ABDC

- 24. (1)Violin
 - (3)Veena

Flute (2)(4)Guitar

25. (1) 289

(2)361

(3) 441

(4)569

In each question number 26 to 35, a sequence of numbers or letters that follow a definite pattern are given. Each question has a blank space. This space has to be filled by the correct answer from the four given options to complete the sequence without breaking the pattern.

- 26. 7:25 :: 13:_
 - (1) 64

(2)121

(3) 196

- (4)144
- 27. 62:88 : :
 - (1) 73

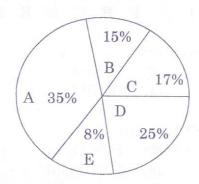
(2)83

(3) 63

| 28. | $\frac{10}{13}, \frac{17}{20}, \frac{24}{27}, \frac{31}{34},$ | $,\frac{45}{48},\frac{52}{55}$ | |
|-----|---------------------------------------------------------------|--------------------------------|-----------------|
| | (1) $\frac{37}{41}$ | (2) | $\frac{32}{34}$ |
| | (3) $\frac{38}{41}$ | (4) | 39 34 |
| 29. | 3, 4, 9,, 155, 92 | 4 | |
| | (1) 25 | (2) | 48 |
| | (3) 74 | (4) | 32 |
| 30. | (3, 6), (4, 12), (5, 20), | , (7, 42 | 2), (8, 56) |
| | (1) (6, 30) | (2) | (6, 25) |
| | (3) (6, 35) | (4) | (6, 54) |
| 31. | A4C, D25F, J1 | 21L, M196 | 0 |
| | (1) G46I | (2) | G64I |
| | (3) G81I | (4) | G49I |
| 32. | JOTY, INSX,, (| GLQV, FKE | PU |
| | (1) HKMR | (2) | HMRW |
| | (3) MHRW | (4) | MRWH |
| 33. | 5:55 :: 555: | | |
| | (1) 5555 | (2) | 55555 |
| | (3) 555555 | (4) | 5555555 |
| 34. | 114:36 :: 514: | | |
| | (1) 49 | (2) | 64 |
| | (3) 100 | (4) | 81 |
| 35. | BF:GK:::SV | V | Ø. |
| | (1) NQ | (2) | RN |
| | (3) RV | | NR |

| (b) | <u>Coding problems:</u> Based on the following coding system and subject to the given conditions answer the questions 36 to 40 . |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | Number/Symbol : O 6 # 3 1 8 \$ 4 7 9 @ % 5 * & 2 Code : M I J F B G N K L A E P D H C O |
| 36. | What is the code word for 6@93#? (1) IEFAN (2) IEAFJ |
| | (3) IFAEN (4) IEBPJ |
| 37. | What is the code word for *18%50? |
| | (1) HBNDPM (2) HBGDPM (3) HBGPDM (4) HBDPGM |
| 38. | |
| | (1) CALBHPM (2) CALPHBM (3) CAPLBHM (4) CALPHBM |
| | (5) CALLIDIN (4) CALLIDIN |
| 39. | A CONTROL OF CONTROL O |
| | (1) JDOKHMIP (2) JDOHKIMP (3) JDOHIMKP (4) JDOHKMIP |
| | (4) 3DOIIIMIN (4) 3DOIIIMIN |
| 40. | A CACHE STAR STAR CONTRACT CONTRACT SERVICE TRACTICAL AND A STAR POLICE CONTRACT CON |
| | (1) LMBCGJ (2) LMCBGJ (3) LMCGBJ (4) LMGCBJ |
| | |
| | estion numbers 41 to 45: are based on the following coding pattern. Study the |
| | tern carefully. STRING is coded as 164309 and BEATL is coded as 25768, and the above pattern answer the questions 41 to 45 . |
| 41. | What is the code for TRAIN? |
| | (1) 64730 (2) 64830 |
| | (3) 68430 (4) 64703 |
| 42. | What is the code for GATES? |
| | (1) 97561 (2) 97651 |
| | (3) 97165 (4) 97851 |
| 43. | 94765 is the code for |
| | (1) GRTAE (2) GRAET |
| | (3) GRATE (4) GETRA |
| 44. | What is the code for REAL? |
| | (1) 4587 (2) 4578 |
| | (3) 4857 (4) 4576 |
| 45. | 30654 is the code for |
| 10. | (1) INETR (2) INTRE |
| | (3) INRTE (4) INTER |
| | |

(c) <u>Data analysis:</u> The following Pie chart shows the heads of expenditure under various categories in percentages in a budget of Rs. 2,675 lakhs of an industry. Study the chart carefully and answer the **questions 46 to 50**.



A: Salaries, B: Canteen, C: Medical expenses

- D: Insurance and Social Security, E: Miscellaneous.
- 46. How much money in lakhs of rupees is earmarked towards insurance and social security?
 - (1) 936.25

(2) 668.75

(3) 401.25

- (4) 454.75
- 47. If the expenditure during the year amount to 9% of the canteen budget then how much money in lakhs of rupees is unspent?
 - (1) 401.25

(2) 240.75

(3) 160.5

- (4) 80.2
- 48. If the total amount spent during the year amount to 98.2% of the total budget and the expenditure during the year amount to 96.5% of the medical expenses budget then the ratio of unspent budget on medical expenses to total unspent budget (approximate to two decimal places).
 - (1) 15.29:48.51
- (2) 15.72:48.25
- (3) 15.92:48.35
- (4) 15.92:48.15
- 49. The amount spent during the year on salaries and miscellaneous amount to:
 - (1) 1336.5

(2) 1176.25

(3) 1150.25

- (4) 1096.75
- 50. If the total budget is Rs. 2,500 lakhs instead of Rs. 2,675 lakhs then how much amount will be decreased on medical expenses, in lakhs of rupees?
 - (1) 425

(2) 625

(3) 200

Directions for questions 51 to 55:

Read the following information and answer the questions 51 to 55:

A survey of the students in an educational institute was conducted to find out their interest in the three games played - Football (F), Cricket (C) and Hockey (H). It was found that 60% liked Football (F), 50% liked Hockey (H), 50% liked Cricket (C), 30% liked F and H, 20% liked H and C, 30% F and C and 10% liked all the three games.

- 51. What percent of the students in the school liked F and H but not C?
 - (1) 40

(2) 30

(3) 10

- (4) 20
- 52. What percent of the students did not like any game?
 - (1) 30

(2) 20

(3) 40

- (4) 10
- 53. What percent of the students liked exactly two out of the three games?
 - (1) 10

(2) 30

(3) 80

- (4) 40 -
- 54. What percent of the students liked only F?
 - (1) 10

(2) 60

(3) 20

- (4) 40
- 55. What percent of the students liked at least two out of the three games.
 - (1) 30

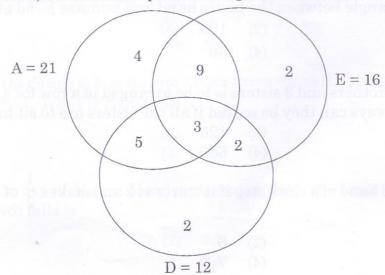
(2) 60

(3) 40

(4) 80

Directions for the questions 56 to 60:

Study the following figure carefully and answer the **questions 56 to 60**. The circle A represents actors, the circle E represents engineers and circle D represents doctors.



- 56. How many are at least one of actors and doctors and engineers?
 - (1) 12

(2) 16

(3) 21

| 57. | Hov | w many are all a | actors and doct | ors and engin | eers? |
|-----|------|----------------------|-------------------------|---------------------|----------------------------------------------|
| | (1) | 8 | (2) | 5 | |
| | (3) | 3 | (4) | 12 | |
| | | | | | |
| 58. | | | | | |
| | (1) | 12 | (2) | 5 | |
| | (3) | 16 | (4) | 3 | |
| 59. | Hor | w many are botl | actors and do | ctors? | |
| 00. | (1) | 8 | (2) | 12 | |
| | (3) | 5 | (4) | 3 | |
| | (0) | 0 | Semus van | ots did not life | |
| 60. | Hor | w many are not | of the three car | tegories? | |
| | (1) | 26 | | 20 | |
| | (3) | 0 | (4) | 21 | |
| | . / | | | | |
| (d) | Da | te, Time and A | Arrangement | problems: | darked sowerds 198 (5) |
| | | | | wints he still a to | solute odd to turned tod W |
| 61. | If + | means - , - n | neans +, x mea | ans ÷ and ÷ m | eans x, then |
| | ((8 | $(2+36) \div 2-15-9$ | $9 \times 9 \times 9 =$ | | |
| | (1) | 13 | (2) | 14 | |
| | (3) | 11 | (4) | | |
| | , | | to lake of the | | |
| 62. | If S | 9 # 4 = 65 and 1 | 0 # 6 = 64 then | 11#8= | |
| | (1) | 44 | (2) | 60 | |
| | (3) | 57 | (4) | 48 | |
| | | ahoseorgan.C.al | didners and circ | enjusente ene | coresents actors, the procleder |
| 63. | In | | | | nd minutes hand at |
| | (1) | 90 | (2) | | |
| | (3) | 150 | (4) | 60 | |
| 64. | A f | amily of 4 broth | ers and 3 sister | rs is to be arra | anged in a row for a photograph. |
| 04. | | | | | sisters are to sit together? |
| | (1) | 720 | (2) | 120 | |
| | (3) | 360 | (4) | 600 | |
| | | | | | 1 |
| 65. | | | nd of a clock sto | p if it starts at | t 2 and makes $\frac{1}{2}$ of a revolution, |
| | clo | ck wise? | | | |
| | (1) | 2 | (2) | 6 | |
| | (3) | 8 | (4) | 7 | |
| 66. | 40 | how many arrai | ngements of the | e elements { T, | , I, N, E $\}$ the vowels do not come |
| | (1) | 24 | (2) | 6 | |
| | (3) | 20 | (4) | 12 | |
| | | | | | |

| 37. | Which direction a man revolution clockwise? | will face | if he starts facing | east and make1½ of a |
|-----|------------------------------------------------------------|-----------------------|----------------------------------------------|-------------------------------------------------------|
| | (1) West (3) South | (2) (4) | East North | |
| 68. | If two cylinders of diam distance between their ce | | cm and 12 cm tou | ach externally, then the |
| | (1) 26(3) 13 | (2) (4) | 14 24 | |
| 69. | A train is moving at a un 20 minutes? | niform spe | eed of 75 km /hour. | How far will it travel in |
| | (1) 20 (3) 21 | (2) (4) | 25 28 | |
| 70. | A car takes 2 hours to 60 km / hour. How lon 80 km / hour? | reach a ag will it | destination by tra | avelling at the speed of r travels at the speed of |
| | (1) 1 ½ hours (3) 1 ¼ hours | (2) (4) | 2 ½ hours 1 ¾ hours | |
| 71. | If 15 workers can build a the same work in 30 hou | | hours, how many w | vorkers will be required to |
| | (1) 16 (3) 22 | (2) (4) | 18 24 | |
| 72. | The ages of Rahul and H their ages will be 56 year | aroon are | e in the ratio 5:7. Fo is Rahul's present | our years later the sum of age? |
| | (1) 28 (3) 24 | (2) (4) | 20 22 | |
| 73. | Raju's father's age is 5 ye 44 years old. What is Ra | | | laju's age. Raju's father is |
| | (1) 11 (3) 13 | (2) (4) | 12 14 | |
| 74. | If the first day of May is that month falls is | s Monday | , then the date on | which the last Monday of |
| | (1) 22 (3) 25 | (2) (4) | 23 29 | |
| 75. | In the array 8735413462 number is followed by tw | | | es are there where an odd |
| | (1) 1 (3) 2 | (2) (4) | 3 | |

76. If x: y = 4:5, then (2x+3y): (4x-y) =

(1) $\frac{21}{13}$

(2) $\frac{23}{11}$

(3) $\frac{13}{21}$

(4) $\frac{23}{11}$

77. A purse contains Rs. 5, Rs. 10, Rs. 20 notes in the ratio 7:5:3. If the total amount is Rs. 1,015, the number of Rs. 10 notes in the purse is _____.

(1) 25

(2) 30

(3) 35

(4) 40

78. If $125^{x+3} = 25^{2x+3} = 5^{3y}$, then x + 2y =

(1) 15

(2) 12

(3) 9

(4),6

79. If $x = 5^{1/3} + 5^{-1/3}$, then $x^3 - 3x =$

(1) $5+5^{2/3}$

- (2) $\frac{24}{5}$
- (3) $5^{2/3} + 5^{-2/3}$
- (4) $\frac{26}{5}$

80. If $x = 9 + 4\sqrt{5}$, then $x^2 + \frac{1}{x^2} =$

(1) 322

(2) $18+12\sqrt{5}$

(3) 324

(4) $27 + 12\sqrt{5}$

81. $\sqrt{21+8\sqrt{5}} - \sqrt{21-8\sqrt{5}} =$

(1) 8

(2) $16\sqrt{5}$

(3) $2\sqrt{5}$

| | | (1) | 999 | (2) | 666 |
|---|-----|----------------|---------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------------------------------------|
| | | (3) | 4444 | (4) | 77777 |
| | 83. | If th | ne sum of first n natural r | numb | ers is 406, then n = |
| | | | | | J000111 a size a second second |
| | | (1) | 14 | (2) | 21 |
| | | (3) | 28 | (4) | 29 |
| | 84. | | e least positive integer thare is | nat m | ust be added to 3945 to make it a perfect |
| | | /4\ | 10 | (0) | |
| | | (1) | 19 | | 55 |
| | | (3) | 30 | (4) | 24 |
| ć | 85. | The | e least positive integer wh | ich is | exactly divisible by 24, 36, 48, 72 is |
| | | (1) | 144 | (2) | 240 |
| | | (3) | 72 | (4) | 180 |
| | 86. | | CM and GCD of two position numbers is 357, then the | | tegers are 4641 and 21 respectively. If one or r number is |
| | | (1) | 13 | (2) | 39 |
| | | (3) | 91 | (4) | 273 |
| | 87. | (1- | $-\frac{1}{3}\left(1-\frac{1}{4}\right)\left(1-\frac{1}{5}\right)\dots\left(1-\frac{1}{5}\right)$ | $\left(\frac{1}{90}\right) =$ | $\frac{1}{x}$ then $x = \underline{\hspace{1cm}}$ |
| | | (1) | 45 | (2) | 90 |
| | | (3) | 89 | (4) | 44 |
| | 88. | $4\frac{1}{3}$ | $\times 3\frac{1}{5} \div 5\frac{1}{2} =$ | | |
| | | (1) | 1144 15 | (2) | 416 165 |
| - | | (3) | 1144 165 | (4) | 416 15 |
| | | | | | |

82. The number which is divisible by 11 among the following is

The true statement among the following is (2) $4^5 < 5^4$ (1) $2^7 < 7^2$ (4) $3^6 < 6^3$ (3) $8^3 < 3^8$ 90. If a number in binary code is 111000111, then the decimal representation of that number is 555 (1) 544 (2)(3) 455 (4)444 91. $5\frac{1}{3}$ percent of $\frac{243}{256}$ is 8100 (3)If 7% of x is equal to 4% of 175, then x =(1) 25 (2)50 125 (3) 100 (4)93. In a school, 45% of students are girls and the remaining boys are 605. Then the total number of students in the school is (1) 1000 (2)1100 (4)900 1200 94. A reduction of 25% in the price of bananas would enable a customer to obtain 20 bananas more for Rs. 300/-. The original price of bananas per dozen in rupees is Rs. 45 (1) Rs. 60 (2)(3) Rs. 40 (4)Rs. 30 When an article is sold for Rs. 1,080/-, a trader incurs a loss of 10%. To get a profit of 15%, the selling price of the article should be _____ (2) 1320 (1) 1200 1440 (3)1380

| | 96. | 3. A trader buys 9 pens for Rs. 800/- and s Rs. 900/ The profit percent is | ells them at the rate of 8 pens for |
|---|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| | | (1) $18\frac{1}{9}$ (2) $21\frac{7}{25}$ | |
| | | (3) $26\frac{9}{16}$ (4) $28\frac{4}{11}$ | |
| | 97. | 7. A starts a business with a capital of Rs. 25 business with a capital of Rs. 32,000/ At Rs. 14,700. Then the share of B in the pro (1) Rs. 7,200 (2) Rs. 7,7 (3) Rs. 6,700 (4) Rs. 6,2 | the end of the year there is a profit of fit in rupees is 00 |
| | 98. | 8. Three persons A, B, C together start a burespectively. A being a working partner, to Then B's share, in rupees, in a profit of rupees is (1) Rs. 63,000 (2) Rs. 1,0 (3) Rs. 84,000 (4) Rs. 96, | akes a salary of Rs. 4,000 per month. Rs. 3 lacs at the end of the year in 0,000 |
| C | 99. | 9. Two persons A, B can complete a piece of respectively. If A starts the work and be number of days required to complete the value of the starts of the start of the starts of the start | th work in alternate days, then the |
| | | (3) $14\frac{1}{2}$ (4) $15\frac{1}{2}$ | |
| | 100 | 00. A, B, C can together complete a work in 3 8 days A left the work and then B and C f The number of days required for A alone (1) 30 (2) 40 (3) 45 (4) 50 | inished the work in the next 20 days. |
| | 101 | 01. 6 Men can prepare 10 toys in 5 days by w of days required for 10 men to prepare is(1) 2 (2) 3 | orking 4 hours per day. The number 15 toys by working 6 hours a day |
| | | (3) 4 (4) 5 | |
| | 102 | 102. Two cars start from the points A, B directions with a speed of 40 KMPH a distance between A and B is 120 KM, the their start is | and 60 KMPH respectively. If the |
| | | (1) $1\frac{1}{2}$ hours (2) 1 hou | r 20 minutes |
| | | | r 8 minutes |

| | | ring at a speed of 60 K | | | |
|------|-------|--------------------------------------------------------------------------------------------|--------------------------------------|------------------------------------------------------------|------------------------------------------------------------|
| | kilo | meters, is | MPH to t | ravel certain distar | nce. Then the distance, in |
| | (1) | 180 | (2) | 160 | |
| | (3) | 120 | (4) | 100 | |
| 104. | | he perimeters of a connecter of the circle to t | | | ne, then the ratio of the |
| | (1) | 2: π | (2) | $\pi:2$ | |
| | (3) | $\pi:4$ | (4) | 4: π | |
| 105. | as t | hat of the rectangle, t 49 | then the (2) | and 12 m. If the per area of the square in 98 147 | imeter of a square is same in cm ² is |
| | X Y | | | | |
| 106. | The | e taps A, B can im a ta e taps are opened at th uired for tap A to fill t 4 hours | e same ir | nstant. After 1 house ace in the tank is | s and 8 hours respectively. r tap B is closed. The time |
| | (3) | $4\frac{1}{2}$ hours | (4) | 4 hours 45 minut | es |
| 107. | is fi | lled in 12 hours. Then of water is | ank in 10 n the time | e taken, in hours, fo | ak at the bottom, the tank or the leak to empty a tank |
| | (1) | 30 | (2) | 45 | |
| | (3) | 50 | (4) | 60 | |
| 108. | | e sides of a rectangle v rectangle is square n | | meter 100 m are th | e ratio 3:2 then the area of |
| | (1) | 600 | (2) | 1200 | |
| | (3) | 1800 | (4) | 2400 | |
| 109. | | | | ibe is 96 m ² , then | the volume of the cube, |
| | (1) | | (2) | | |
| | | | (4) | 256 | |
| | | | | | |
| 110 | Λο | colution of the equation | 000000000000000000000000000000000000 | (mod 7) is | |
| 110. | A s | solution of the equation 2 | on $9x \equiv 5$ (2) | | |

| | The contrapositive of the s | uauciiic. | (F · 1) |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | $(1) (\sim r) \rightarrow (\sim p \lor \sim q)$ | (2) | $r \rightarrow (p \lor q)$ |
| | $(3) (\sim r) \rightarrow (\sim p) \land (\sim q)$ | (4) | $(\sim p) \land (\sim q) \rightarrow \sim r$ |
| 112. | The inverse of the stateme | ent p→ | $(q \rightarrow r)$ is |
| | $(1) (\sim p) \rightarrow (q \land (\sim r))$ | (2) | $(\sim p) \rightarrow (\sim q \land r)$ |
| | $(3) (\sim p) \rightarrow ((\sim q) \lor r)$ | (4) | $(\sim p) \rightarrow (q \lor (\sim r))$ |
| 13. | If a set A has 7 element 2 elements is | s, then | the number of subsets of A with at least |
| | (1) 32 | (2) | 60 |
| | (3) 8 | (4) | 120 |
| 14. | If A, B are two sets s | such th | nat $n(A-B) = 7$, $n(B) = 13$ and $n(A \cap B) = 3$, |
| | then $n(A \cup B) =$ | | |
| | (1) 10 | (2) | 16 |
| | (3) 20 | (4) | 23 |
| | Then R is | | |
| | only symmetric relation Symmetric and trans only transitive relation Equivalence relation | on on A | lation on A |
| 116. | only symmetric relation Symmetric and trans only transitive relation Equivalence relation | on on A | lation on A |
| 116. | only symmetric relation Symmetric and trans only transitive relation Equivalence relation A, B are 2 sets having | on on A | lation on A |
| 116. | only symmetric relation Symmetric and trans only transitive relation Equivalence relation A, B are 2 sets having relations from A to B is | on on A on A g 4, 5 | lation on A elements respectively, then the number of |
| | only symmetric relation Symmetric and trans only transitive relation Equivalence relation A, B are 2 sets having relations from A to B is 20 25 | sitive re on on A on A g 4, 5 (2) (4) ch 3, 4 | lation on A elements respectively, then the number of 2^{20} 2^{9} elements respectively, then the number of injections is |
| | only symmetric relation Symmetric and trans only transitive relation Equivalence relation A, B are 2 sets having relations from A to B is 20 25 If A, B are two sets with | sitive re on on A on A g 4, 5 (2) (4) ch 3, 4 | lation on A elements respectively, then the number of 2^{20} 2^{9} elements respectively, then the number of |
| | only symmetric relation Symmetric and trans only transitive relation Equivalence relation A, B are 2 sets having relations from A to B is 20 2⁵ If A, B are two sets with functions from A to B that | on on A on A g 4, 5 (2) (4) th 3, 4 th are not | lation on A elements respectively, then the number of 2^{20} 2^{9} elements respectively, then the number of injections is |
| 117. | only symmetric relation Symmetric and trans only transitive relation Equivalence relation A, B are 2 sets having relations from A to B is 20 2⁵ If A, B are two sets with functions from A to B that 64 57 | sitive re on on A on A g 4, 5 (2) (4) ch 3, 4 t are no (2) (4) | elements respectively, then the number of 2^{20} 2^{9} elements respectively, then the number of injections is 81 40 |
| 117. | only symmetric relation Symmetric and trans only transitive relation Equivalence relation A, B are 2 sets having relations from A to B is 20 2⁵ If A, B are two sets with functions from A to B that 64 57 | sitive re on on A on A g 4, 5 (2) (4) ch 3, 4 t are no (2) (4) | elements respectively, then the number of 2^{20} 2^{9} elements respectively, then the number of injections is 81 40 we real numbers. A function $f: \mathbb{R}^+ \to \mathbb{R}^+$ is |
| 117. | only symmetric relations Symmetric and trans only transitive relations Equivalence relations A, B are 2 sets having relations from A to B is 20 25 If A, B are two sets with functions from A to B that 64 57 Let R⁺ be the set of all | sitive re on on A on A g 4, 5 (2) (4) ch 3, 4 t are no (2) (4) | elements respectively, then the number of 2^{20} 2^{9} elements respectively, then the number of tinjections is 81 40 we real numbers. A function $f: \mathbb{R}^+ \to \mathbb{R}^+$ is \mathbb{R} . Then f is |

119. If a function $f:\mathbb{R}\to\mathbb{R}$ is defined by f(x)=3x+7 for all $x\in\mathbb{R}$, then

$$f^{-1}(12) =$$

(1) 43

(2) 5

(3) $\frac{7}{3}$

(4) $\frac{5}{3}$

120. Equation of the line passing though the point (7, -1) and making an intercept of length 3 units on negative x-axis is

- $(1) \quad 2x + 7y 7 = 0$
- (2) x + 10y + 3 = 0
- (3) x + 4y 3 = 0
- (4) 2x + 5y 9 = 0

121. If x, y intercepts of a line are respectively -4, 7, then the slote of the line is

 $(1) \frac{4}{7}$

(2) $\frac{-4}{7}$

(3) $\frac{7}{4}$

(4) $\frac{-7}{4}$

122. If $\tan \theta = 3/4$ and θ is not in first quadrant, then $7\cos \theta - 12\sin \theta =$

(1) $\frac{27}{5}$

(2) $\frac{8}{5}$

(3) $\frac{-27}{5}$

(4) $\frac{-8}{5}$

123. If $\cos ec\theta + \cot \theta = 5$, then $\sec \theta =$

(1) $\frac{13}{12}$

(2) $\frac{13}{5}$

(3) $\frac{12}{5}$

 $(4) \frac{5}{12}$

124. The angle of elevations of the top of a tower from A point A is observed to be 30°. After moving 30 meters towards the foot of the tower, the angle of elevation of the top of the tower was 60°. Then the height of the tower, in meters, is

(1) 15

(2) 30

(3) $30\sqrt{3}$

(4) $15\sqrt{3}$

125. If x,y,z are non zero real numbers such that $x^2 + 4y^2 + 9z^2 - 2xy - 6yz - 3zx = 0$, then x:y:z=

(1) 1:2:3

(2) 2:3:6

(3) 6:3:2

(4) 3:2:1

- 126. A polynomial in x leaves remainders 3, -4 when divided by x+2 and x+3respectively. If ax + b is the remainder when the same polynomial is divided by $x^2 + 5x + 6$, then b - 2a =
 - (1) 4

(2)3

(3) 2

- (4)
- 127. If $2x^2 7x 4 > 0$ then x lies in the interval

 - (1) $\left(-\infty, -\frac{1}{2}\right) \cup \left(4, \infty\right)$ (2) $\left(-\infty, -4\right) \cup \left(\frac{1}{2}, \infty\right)$
 - (3) $\left(-\frac{1}{2}, 4\right)$
- $(4) \quad \left(-4, \, \frac{1}{2}\right)$
- 128. If α, β are the roots of the quadratic equation $3x^2 + 4x + 5 = 0$, then $\alpha^3 + \beta^3 =$
 - (1) $\frac{-64}{27}$

- 129. If 27, 35 are respectively the 7th and 23rd terms of an A.P., then the common difference of the A.P. is
 - (1) 2

(3) 3

- $(4) \frac{1}{3}$
- 130. The first term of G.P. is 5 and the sum to infinite terms is 7. Then the common ratio of the G.P. is
 - (1)5/7

(3)3/7

- (4) 2/7
- 131. The term independent of x in the expansion of $\left(2x^2 + \frac{3}{x}\right)^6$ is
 - (1) 324

(2)3240

(3) 4860

- 132. If A is a square matrix and A^T denotes the transpose of A, then $A-A^T$ is always a
 - (1) Symmetric matrix
- (2) Skew-Symmetric matrix
- (3) Orthogonal matrix
- (4) Involutory matrix
- 133. $\lim_{x \to 3} \frac{7x^2 9x 36}{x^3 27} =$
 - (1) $\frac{11}{9}$

(2) $\frac{9}{11}$

(3) $\frac{131}{27}$

- (4) does not exist
- 134. If $y = x^y$, then $\frac{dy}{dx} =$
 - $(1) \quad \frac{y^2}{x(1-\log x)}$
- $(2) \quad \frac{y^2}{x(1-y\log y)}$
- $(3) \quad \frac{y^2}{x(1-x\log y)}$
- $(4) \quad \frac{y^2}{x(1-\log y)}$
- 135. If 12^{th} and 13^{th} terms of the expansion $(1+x)^{25}$ are equal, then x=
 - (1) 1

(2) $\frac{6}{7}$

(3) $\frac{15}{11}$

- (4) $\frac{7}{6}$
- 136. $\lim_{x \to 0} \frac{\sqrt{2 + \sin x} \sqrt{2 \sin x}}{x} = \underline{\hspace{1cm}}$
 - (1) $\frac{1}{\sqrt{2}}$

(2) $\sqrt{2}$

(3) $\frac{1}{2\sqrt{2}}$

(4) $2\sqrt{2}$

| 137 | . If t | he lengths of the diagona he rhombus, in square co | ls of a | a rhombus are 12 cm and 18 cm, then the area eters, is |
|------|--------------------------|------------------------------------------------------------|-----------------------------|-----------------------------------------------------------------------------------------|
| | (1) (3) | 27 108 | (2) (4) | 54 216 |
| 138. | 10, | the length of the sides 8, 6 cms, then the le timeters, is | BC, ngth | CA, AB of triangle ABC are respectively of the median through the vertex A, in |
| | | $\sqrt{73}$ 15 | (2) (4) | $2\sqrt{13}$ |
| 139. | If (2 4 th | 2,7), (3, – 5), (7,1) are three vertex is | ee con | asecutive vertices of a parallelogram, then its |
| | | (-2, 1) $(8, -11)$ | (2) (4) | (6, 13) (5, 14) |
| 140. | The | ratio in which the points $(7, -5)$, $(-5, 16)$ is | int (3 | 3, 2) divides the line segment joining the |
| | (1) (3) | 2:1 internally 1:2 internally | (2) (4) | 2:1 externally 1:2 externally |
| 141. | The | arithmetic mean of the s | squar | es of the first 25 natural numbers is |
| | | <u>221</u> 6 | (2) | 221 221 22 22 22 22 22 22 22 22 22 22 22 |
| | (3) | 121 | (4) | $\frac{121}{6}$ |
| 142. | If th | e Mean and Mode of a sy its median is | mme | tric distribution are respectively 48 and 54, |
| | (1) (3) | 50 52 | (2) (4) | 51 53 |
| 143. | If th | e variance of $x_1, x_2,, x_n$ | n is b | 5, then the variance of |
| | | $-7, 3x_2 + 7, \dots, 3x_n + 7 $ is | | |
| | (1) | | (2) (4) | 45 75 |
| | 15 it (1) | arithmetic mean of 10 iems is 22. Then the arith 16 | tems hmeti (2) (4) | is 12 and the arithmetic mean of another ic mean of the combined data of 25 items is 17 |

| | TLE | quency | 14 | 41 00 | 19 | 10 | 0 | 1 | j j | _ Z | | |
|------|------------|--------------------------------|----------------|-----------|------------|-----------------|------------------------|---------|--------|----------|----------|----------|
| | (1) (3) | 11 9 | | | (2) (4) | 7 13 | | | | | | |
| 146. | | ne sum or the coeff | | | | | | obse | ervati | ons of | a data | a is 15, |
| | (1) | 7/8 | | | (2) | $\frac{9}{8}$ | | | | | | |
| | (3) | $\frac{7}{9}$ | | | (4) | $\frac{5}{9}$ | | | | | | |
| 147. | | o fair dic | | | | | | e prob | abilit | y that | the sur | n of the |
| | (1) | 19 36 | | | (2) | $\frac{17}{36}$ | | | | | | |
| | (3) | <u>5</u> 12 | | | (4) | $\frac{7}{12}$ | | | | | | |
| 148. | | en 6 boys wo girls si | | | arran | ged in | n a row | at rai | ndom | , the pi | obabil | ity that |
| | | $\frac{5}{12}$ | | | (2) | $\frac{7}{12}$ | | | | | | |
| | (3) | $\frac{2}{3}$ | | | (4) | $\frac{1}{3}$ | | | | | | |
| 149. | | en 5 fair ids is | coins | are tosse | d at 1 | rando | m, the | e prob | abilit | y of ge | etting a | at least |
| | (1) | $\frac{1}{2}$ | | | (2) | $\frac{3}{16}$ | | | | | | |
| | (3) | $\frac{5}{16}$ | | | (4) | <u>5</u> 32 | | | | | | |
| 150. | | n 2 cards | | | | | | well sl | huffle | d pack | of car | ds, the |
| 4 | (1) | $\frac{1}{13}$ | emida enida | es ed. U | (2) | 1 51 | enides enides () | | | | | |
| | (3) | 1 26 | | | (4) | $\frac{1}{17}$ | | | | | | |
| | | | | | | | | | | | | |

145. The median of the following data is

| X | 3 | 5 | 7 | 9 | 11 | 13 | 15 | 17 | 19 |
|-----------|----|----|----|----|----|----|----|----|----|
| frequency | 12 | 21 | 33 | 15 | 10 | 8 | 7 | 3 | 2 |

(1) 11

(2) 7

(3) 9

(4) 13

146. If the sum of the squares of deviations of 9 observations of a data is 15, then the coefficient of Rank correction is

(1) $\frac{7}{8}$

(2) $\frac{9}{8}$

(3) $\frac{7}{9}$

(4) $\frac{5}{9}$

147. If two fair dice are thrown at random, then the probability that the sum of the numbers turned up is a prime number is

(1) $\frac{19}{36}$

(2) $\frac{17}{36}$

(3) $\frac{5}{12}$

(4) $\frac{7}{12}$

148. When 6 boys and 3 girls are arranged in a row at random, the probability that no two girls sit together is

(1) $\frac{5}{12}$

(2) $\frac{7}{12}$

(3) $\frac{2}{3}$

(4) $\frac{1}{3}$

149. When 5 fair coins are tossed at random, the probability of getting at least 4 leads is

(1) $\frac{1}{2}$

(2) $\frac{3}{16}$

(3) $\frac{5}{16}$

(4) $\frac{5}{32}$

150. When 2 cards are drawn at random from a well shuffled pack of cards, the probability that both are hearts cards is

(1) $\frac{1}{13}$

(2) $\frac{1}{5}$

(3) $\frac{1}{26}$

(4) $\frac{1}{17}$

SECTION - III COMMUNICATION ABILITY

Marks: 50

<u>Directions for the questions 151 to 155:</u> Fill in the blanks with the most appropriate word from the given choices:

| 151. | | electric current will re-conductor. | not | throu | gh rubber because | e it is a |
|---------------|------------|-------------------------------------|--------|--------------------|---------------------|-----------|
| | (1) | dispose | (2) | pass | | |
| | (3) | conduct | (4) | cut | | |
| 152. | | tired after t | | | | |
| | , , | have | (2) | had | | |
| | (3) | were | (4) | was | | |
| 153. | In_ | climates u | sually | there are no extre | emes of heat and co | old. |
| | (1) | temperate | (2) | tropical | | |
| | (3) | cold | (4) | hot | | |
| 154. | Lan | nd snakes are not usual | lv | adding while its | | |
| | | instinctive | (2) | aggressive | | |
| | (3) | useful | (4) | docile | | |
| 155 | Cal | cutta is the | of In | dian football. | | |
| 200. | (1) | home | -(2) | house | | |
| | (3) | field | (4) | | | |
| tion: 156. | AU: (1) | DACITY hatred | (2) | arrogance | | |
| | (3) | boldness | (4) | timidity | | |
| 157. | MA | ELSTROM | | | | |
| | (1) | restlessness | (2) | narrow | | |
| | (3) | destructive | (4) | whirlpool | | |
| 158. | WA | STREL | | | | |
| | | crook | (2) | miser | | |
| | (3) | spendthrift | (4) | thief | | |
| 159 | LE | ГНАL | | | \$ 1 | |
| 200. | (1) | deadly | (2) | faint | | |
| | (3) | harsh | (4) | acrid | | |
| 100 | | | (-) | dozza | | |
| 100. | | GENT dominant | (2) | united | | |
| | (1) | frenetic | (2) | convincing | | |
| | ~(0) | Helleric | (4) | Convincing | | |
| | | | | | | |

| | | ns for the questions 16 | 61 to | 170: | Choose the | right answer to fill in the |
|------|------|----------------------------------|--------|---------|--------------|------------------------------|
| blan | ks: | | | | | |
| 1801 | 101 | | 1 30 | | | |
| 161. | | | | | | |
| | ' / | software | (2) | | | |
| | (3) | services | (4) | sales | | |
| | | | | 11 | (S) 1 · | reogaih (I) |
| 162. | | | 1,4-03 | 21,122 | | ram capital. |
| | | union | (2) | delin | | |
| | (3) | separation | (4) | merg | er . | |
| 163. | Тое | enlarge a window so that button. | it co | vers tl | he entire de | sktop, you should click on |
| | (1) | restore | (2) | apply | У | |
| | (3) | minimize | (4) | maxi | mize | |
| | (0) | | . / | | | |
| 164. | The | | ke up | p the a | actual pictu | re on your monitor screen |
| | | Pixels | (2) | Prin | ter | |
| | (3) | Points | (4) | | rrays | |
| | (0) | 1 Offics | (1) | 2400 | 2 2 4 3 | |
| 165 | For | matting short cut for past | te in | Windo | ws 2000 is | (1) nome (3) fel : |
| 100. | | ctrl + x | | ctrl- | | mai (c) |
| | 1 / | ctrl + vallw brow eds es | , , | | _ | |
| | (3) | | | CULI | | |
| 100 | /TOI | | | | | |
| 166. | | year in which ARPANE | | | | |
| | (1) | | (2) | | | |
| | (3) | 1963 | (4) | 1966 |) | |
| 167 | Sou | and policy is the fulcrum of | of eco | nomic | growth. Fu | ılcrum means |
| 101 | (1) | king | (2) | bala | ncing point | |
| | (3) | moving wheel | (4) | | stone | |
| | (3) | moving wheel | (1) | mile | Storic | |
| 168 | Wh | ich of the following is not | a bro | owser? | | |
| 100 | (1) | CROME | 101 | (2) | FIREFOX | |
| | | EXPLORER | | (4) | CHROME | |
| | (3) | EAFLOILEIL | | (1) | CITICOTTE | |
| 160 | Цох | w many function keys are | ther | e in a | lanton? | |
| 109 | | | tilei | (2) | 8 | |
| | (1) | 10 | | (4) | 12 | |
| | (3) | 11 | | (4) | 14 | |
| 100 | mi | wight mana huttan is al | 00.00 | llod | | button. |
| 170 | | e right mouse button is al | iso ca | | tracks | Dation. |
| | (1) | | | (2) | | |
| | (3) | properties | | (4) | print | |
| | | | | | | |

Directions for the questions 171 to 175: Each of the following has four parts forming a sentence. The error will be formed in one of the four parts. Identify the part in which the error occurs: 171. (1) Most people in the village (2)are uneducated (3) and so they are (4)easily cheat by politicians 172. (1) If you visited some (2)of the Western countries (3) you will find (4) that all men dress alike. 173. (1) Sam said that (2)"My mother (3)is much better today." (4)174 (1) Vivek asked (2)me whether (3)wasI his true friend? (4)175. (1) The teacher (2)made Ravi (3) to repeat (4)the home work. Directions for the questions 176 to 180: Each of the following sentences may have one or two or three mistakes or none at all. Mark (1) if there is one mistake (2) if there are two mistakes, (3) if there are three mistakes and (4) if there are no mistakes. 176. I do not like to writing to the newspapers. (1) 1 (2) 2 (3) 3 (4) 4 177. When shall we know the result of the examination? (1) 1 (2) (3) 3 (4) 178. If the weather was fine, I used to walk to home from work every evening. (1)1 2 (2)(3)(4) 179. We congratulated him for winning a scholarship. (1)1 (2)(3) 3 180. He not only cheated his friends but also his parents. (1) 1 (2)(3) 3

Directions for the questions 171 to 175: Each of the following has four parts forming a sentence. The error will be formed in one of the four parts. Identify the part in which the error occurs: 171. (1) Most people in the village (2)are uneducated (3) and so they are (4)easily cheat by politicians 172. (1) If you visited some of the Western countries (3) you will find (4)that all men dress alike. 173. (1) Sam said that (2)"My mother (3) is much (4)better today." 174 (1) Vivek asked (2)me whether (3) was I (4)his true friend? 175. (1) The teacher made Ravi (2)(3) to repeat (4)the home work. <u>Directions for the questions 176 to 180:</u> Each of the following sentences may have one or two or three mistakes or none at all. Mark (1) if there is one mistake (2) if there are two mistakes, (3) if there are three mistakes and (4) if there are no 176. I do not like to writing to the newspapers.

mistakes.

177. When shall we know the result of the examination? (1) 1 (2)(3) 3 (4) 4 178. If the weather was fine, I used to walk to home from work every evening. (1) 1 (2)(3)(4)

(2) 2

(4) 4

179. We congratulated him for winning a scholarship. (1) 1

(4)

(1) 1

(3) 3

180. He not only cheated his friends but also his parents.

(1) 1 (2) 2 (3) 3 (4) 4

Directions for the questions 181 to 185: In the following passage there are blanks, each of which has been numbered. These numbers are printed below the passage and against each, four words are given. Find out the word which fits the blank appropriately. The man _____ (181) a long time _____ (182) of the rich profits that could be made if the land were mined and made careful notes. He explained to his new _____ (183) that he had to ___ ____ (184) to his own country. Once he was there, he set up a large company. It was not long before the peaceful area was taken over by strange men and even _____ (185) machines. 181. (1) made (2)spent (3) had (4)gave 182. (1) thinking (2)singing (3) reading (4)making 183. (1) parents (2)wife (3) children (4)friends 184. (1) back (2)return (3)went (4)come 185. (1) stranger (2)odd (3) beautiful (4)old Directions for the questions 186 to 195: Read the following passage and answer the questions below: Why does not the nation move? First educate the nation, create your legislative body and then the law will be forthcoming. First create the power, the sanction from which the law will spring. The kings are gone, where is the new sanction, the new power of the people? Bring it up. Therefore even for social reform, the first duty is to educate the people and you will have to wait till the time comes. Most of the reforms that have been agitated for during the last century have been ornamental. Every one of these reforms touches the first two castes and no other. The question of widow marriage would not touch seventy percent of the Indian women, and all such questions reach only the higher castes of Indian people who are educated mark you, at the expenses of masses. Every effort has been spent in cleaning their own houses. But this is no reformation. You must go down to the basis of the thing, to the very root of the matter. That is what I call radical reform. Put the fire there and let it burn upwards and make an Indian nation. 186. The author says that social reforms were ornamental because there (1) were unfinished. (2) affected only certain castes. (3) were not useful. (4) were not at all necessary.

| 187. | 'Orr | namental' in the passage mean | ıs | |
|------|------|--------------------------------|--------|--------------------------|
| | (1) | artificial | (2) | embellishing |
| | (3) | intellectual | (4) | superficial |
| 188. | The | question of widow marriage as | moun | nts to |
| | (1) | a very radical reform | (2) | a forward move |
| | (3) | cleaning their own houses | (4) | helping all Indian women |
| 189. | 'Ma | rk' in the passage means | | |
| | (1) | to grade | (2) | to take note of |
| | (3) | to scratch | (4) | to indicate |
| 190 | The | author says that radical refor | m is i | possible only when |
| 100. | (1) | old systems are destroyed | (2) | |
| | (3) | people are educated | | |
| | | | | |
| 191. | Rad | ical in the passage means | | |
| | (1) | fundamental | (2) | rational broom non oh |
| | (3) | irrational | (4) | awesome |
| 192. | "Pu | t the fire there" is a | | |
| | (1) | simile | (2) | metaphor |
| | (3) | image | (4) | apostrophe |
| 193. | "Cle | eaning their own houses" mear | ıs | |
| | (1) | cleaning their surroundings | | |
| | (2) | participating in city cleaning | | |
| | (3) | helping their wives in spring | clear | ning |
| | (4) | reforming only their commun | ities | |
| 194. | Wha | at is lost with the Kings? | | |
| | (1) | royal families | (2) | wealth and palaces |
| | (3) | arts and literature | (4) | power to make laws |
| 195. | The | above passage is | _ | |
| | (1) | descriptive | (2) | narrative |
| | (3) | arguementative | (4) | expository |

<u>Directions for the questions 196 to 200:</u> In the following passage there are blanks each of which has been numbered. Against the numbers printed below the passage four words suggested. Find out the appropriate word / words which fits the blank appropriately in the context of the passage.

| and cultiv | vating suitable crops. Modern and countries, but unless the attention will not improve (198) that the world F | methor people. People of the contract of the c | best ways of improving infertile land ods and machines (196) the e (197) how to use them ople in more fortunate countries (not risis (199) us all. The world and everyone has the right to eat. |
|--------------|---------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 196. (1) | helps | (2) | has helped |
| (3) | help | (4) | was helped |
| 197. (1) | make | (2) | affect seek |
| (3) | know | (4) | |
| 198. (1) | do not understand | (2) | do not acknowledge |
| (3) | do not record | (4) | do not judge |
| 199. (1) | affects | (2) | effects |
| (3) | influences | (4) | stares |
| 200. (1) (3) | owns | (2) | belongs |
| | possesses | (4) | aims |