DO NOT OPEN THE SEAL OF THE BOOKLET UNTIL YOU ARE TOLD TO DO SO

Test Form No.

BK 2011 32 SC PAPER I 4790 (8

Time Allowed: 2 Hours निर्धारित् समय : 2 घण्टे

Maximum Marks: अधिकतम अंक : 200

Read the following instructions carefully before you begin to answer the questions.

This booklet contains questions in English as well as in Hindi.

प्रश्नों के उत्तर देने से पहले निम्नलिखित अनुदेशों को ध्यान से पढ़ लें। इस पुस्तिका में प्रश्न अंग्रेजी तथा हिन्दी दोनों में दिये गये हैं।

INSTRUCTIONS TO CANDIDATES

The Booklet contains 200 questions in all comprising the following four parts:

Part A: General Intelligence and Reasoning

(50 Questions)

Part B: General Knowledge and General Awareness

(50 Questions)

Part C: Numerical Aptitude

(50 Questions)

Part D: English Comprehension

(50 Questions)

- All questions are compulsory and carry equal marks.
- Before you start to answer the questions you must check up this Booklet and ensure that it contains all the pages (1-40) and see that no page is missing or repeated. If you find any defect in this Booklet, you must get it replaced immediately.
- The paper carries negative marking. 0-25 marks will be deducted for each wrong answer.
- 5. You will be supplied the Answer-Sheet separately by the Invigilator. You must complete and code the details of Ticket Number, Roll Number and Test Form Number on Side-I of the Answer-Sheet carefully before you actually start answering the questions. You must also put your signature on the Answer-Sheet at the prescribed place. These instructions must be fully complied with, failing which, your Answer-Sheet will not be evaluated and you will be awarded 'ZERO' mark.
- Answers must be shown by completely blackening the corresponding rectangles on Side-II of the Answer-Sheet against the relevant question number by HB pencil only. Answers which are not shown by HB pencil will not be awarded any mark.
- 7. A machine will read the coded information in the OMR Answer-Sheet. In case the information is incomplete/different from the information given in the application form, the candidature of such candidate will be treated as cancelled.
- The Answer-Sheet must be handed over to the Invigilator before you leave the Examination Hall.
- Failure to comply with any of the above instructions will render a candidate liable to such action/penalty as may be deemed fit.
- 10. The manner in which the different questions are to be answered has been explained at the back of this Booklet (Page No. 40), which you should read carefully before actually answering the
- 11. Answer the questions as quickly and as carefully as you can. Some questions may be difficult and others easy. Do not spend too much time on any question.
- 12. No rough work is to be done on the Answer-Sheet. Space for rough work has been provided below the questions in Part A and Part C of this Booklet.

उम्मीदवारों के लिए अनदेश

इस पुस्तिका में कुल 200 प्रश्न हैं, जिनमें निम्निलिखित चार भाग

भाग क : सामान्य बुद्धि एवं तर्क

(50 प्रश्न)

भाग ख : सामान्य ज्ञान एवं सामान्य जानकारी

(50 प्रश्न)

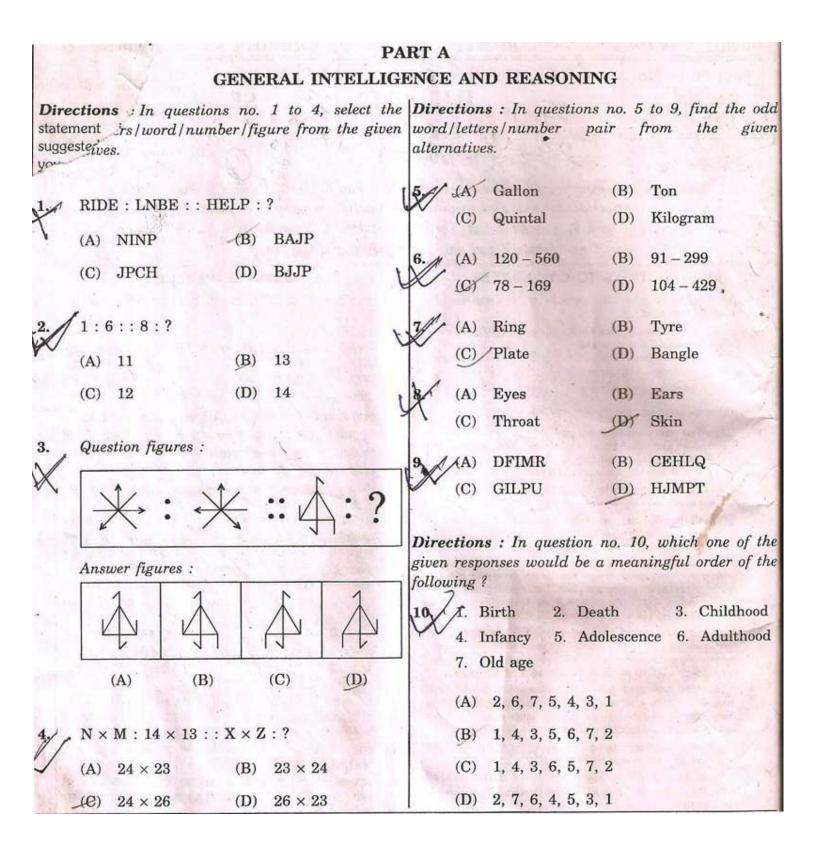
भाग ग : सांख्यिकीय अभिक्षमता

(50 प्रश्न)

भाग घ : अंग्रेजी परिज्ञान

(50 प्रश्न)

- सभी प्रश्न अनिवार्य हैं तथा सबके बराबर अंक हैं।
- प्रश्नों के उत्तर देने से पहले आप इस पुस्तिका की जाँच करके देख लें कि इसमें पूरे पृष्ठ (1-40) हैं तथा कोई पृष्ठ कम या दुबारा तो नहीं आ गया है । यदि आप इस पुस्तिका में कोई त्रुटि पाएँ, तो तत्काल इसके बदले दूसरी पुस्तिका ले लें ।
- प्रश्न-पत्र में नकारात्मक अंकन होगा । हर ग़लत उत्तर के लिए 0-25 अंक काटा जाएगा ।
- निरीक्षक द्वारा आपको उत्तर-पत्रिका अलग से दी जाएगी । प्रश्नों के उत्तर वास्तव में शुरू करने से पहले आप उत्तर-पत्रिका के Side-I में नियमावली के अनुसार ध्यानपूर्वक अपना टिकट नम्बर, रोल नम्बर तथा टेस्ट फॉर्म संख्या अवश्य लिखें और उत्तर-पत्रिका पर निर्धारित स्थान में आप अपने हस्ताक्षर भी अवश्य करें । उपर्युक्त अनुदेशों का पूरी तरह अनुपालन किया जाए, अन्यथा आपकी उत्तर-पत्रिका को जाँचा नहीं जाएगा और 'शुन्य' अंक दिया जाएगा ।
- उत्तर-पत्रिका में सभी उत्तर Side-II में प्रश्न संख्या के सामने दिये गये सम्बन्धित आयताकार खानों को केवल HB पेंसिल से पूरी तरह काला करके दिखाएँ । जो आयताकार खाने HB पेंसिल से नहीं भरे जाएँगे, उनके लिए कोई अंक नहीं दिया जाएगा ।
- ओ.एम.आर. उत्तर-पत्रिका में भरी गई कूट सूचना को एक मशीन पढ़ेगी । यदि सूचना अपूर्ण है अथवा आवेदन प्रपत्र में दी गई सूचना से भिन्न है, तो ऐसे अभ्यर्थी की अभ्यर्थिता निरस्त समझी जाएगी ।
- परीक्षा-भवन छोड़ने से पहले परीक्षार्थी को उत्तर-पत्रिका निरीक्षक के हवाले कर देनी चाहिए।
- ऊपर के अनुदेशों में से किसी एक का भी पालन न करने पर उम्मीदवार पर विवेकानुसार कार्यवाही की जा सकती है या दण्ड दिया
- 10. विभिन्न प्रश्नों के उत्तर देने की विधि इस पुस्तिका के पीछे (पृष्ठ संख्या 40 में) छपे हुए निर्देशों में दे दी गई है, इसे आप प्रश्नों के उत्तर देने से पहले ध्यानपूर्वक पढ़ लें ।
- 11. प्रश्नों के उत्तर जितनी जल्दी हो सके तथा ध्यानपूर्वक दें । कुछ प्रश्न आसान तथा कुछ कठिन हैं । किसी एक प्रश्न पर बहुत अधिक समय न
- 12. कोई रफ़ कार्य उत्तर-पत्रिका पर नहीं करना है । रफ़ कार्य के लिए स्थान इसी पुस्तिका के भाग क तथा भाग ग के प्रश्नों के नीचे दिया गया है।



Which one set of letters when sequentially 15. placed at the gaps in the given letter series shall complete it?

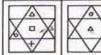
9bbbaaabbbagabbbag

- (A) abbaaba
- ababbaa
- (C) babaaba
- baabaab (D)

Directions: In questions no. 12 to 14, a series is given, with one term missing. Choose the correct alternative from the given ones that will complete the series.



Question figures:



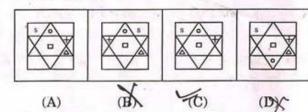


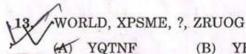






Answer figures :





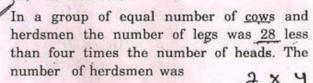
- (B) YRTNF
- (C) YTQNF
- (D) YQNTF

100, 50, 52, 26, 28, 2, 16, 8

- (A) 30
- (B) 36
- (C) 14
- 32 (D)

In a family Mr. Prakash has his wife and his two married brothers of whom one has two children and another has no issue. How many members are there in the family ?

- (A) 12 members
- (B) 8 members
- (C) 6 members
- (D) 10 members



- (D)

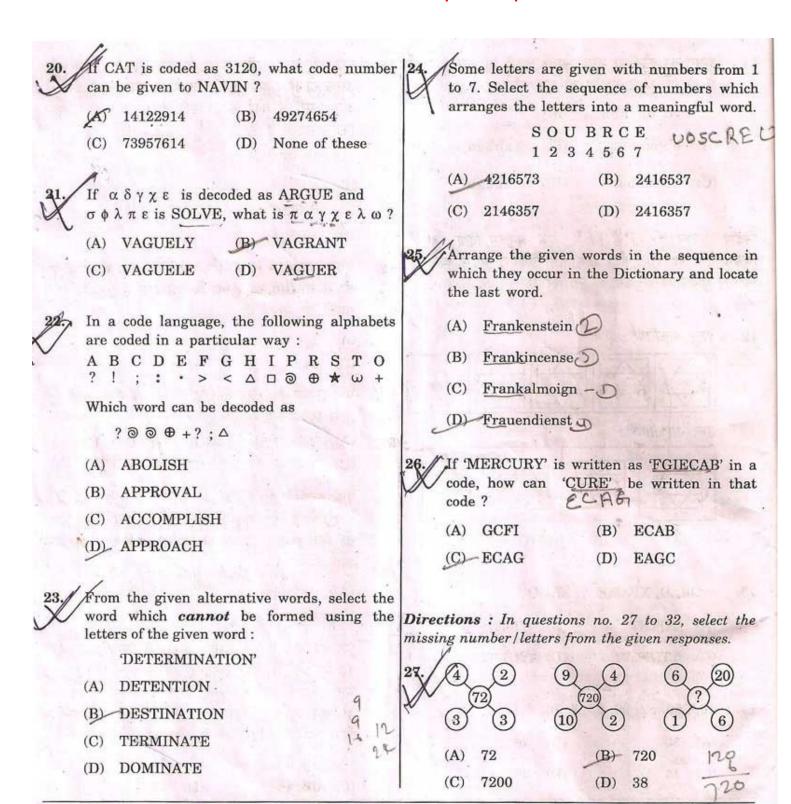


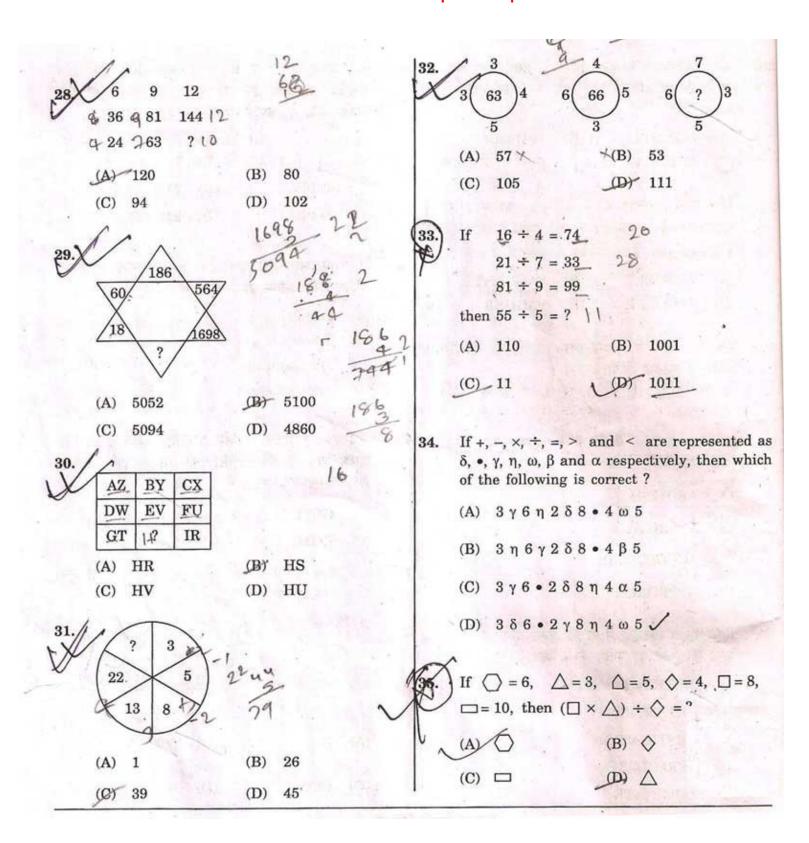
If P is the husband of Q and R is the mother of S and Q, what is R to P?

- (A) Mother
- (B) Sister
- (C) Aunt
- (D) Mother-in-law

The average age of 19 boys in a class is 21 years. If the teacher's age is included, the average increases to 22 years. What is the teacher's age?

- (A) 39 years
- (B) 41 years
- (C) 40 years
- 44 years (D)
- 19. Hari remembers that his father's birthday is between 13th and 16th of June, whereas his sister remembers that their father's birthday is between 14th and 18th of June. On which day is their father's birthday, which both agree ?
 - (A) 14th June
- (B) 15th June
- (C) 16th June
- (D) 17th June





Four children, Akram, Bopsi, Priya and Tulsi are on a ladder. Akram is further up the ladder than Bopsi. Bopsi is in between Akram and Priya. If Tulsi is still further than Akram, who is the second person from the bottom?

- (A) Tulsi
- (B) Akram
- (C) Priya
- (D) Bopsi

Jaya started from house with son Rakesh and moved to North. Before signal point, Rakesh's school bus took him to the right side. Jaya continued in the same line and got petrol filled in the scooter. Then she turned to her left and entered a supermarket. In which direction is the supermarket located from the petrol pump?

- (A) East
- (B) South
- (C) North
- (D) West

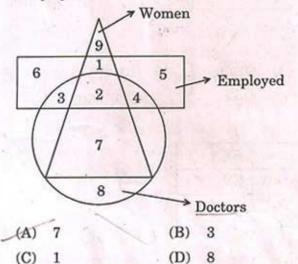
Rema left home and walked 5 km southwards, turned right and walked 2 km and turned right and walked 5 km and turned left and walked 5 km. How many kilometers will she have to walk to reach her home straight?

- (A) 5
- (B) 7
- (C) 17
- (D) 15

Which one of the following Venn diagrams represents the best relationship between Snake, Lizard, Reptiles?

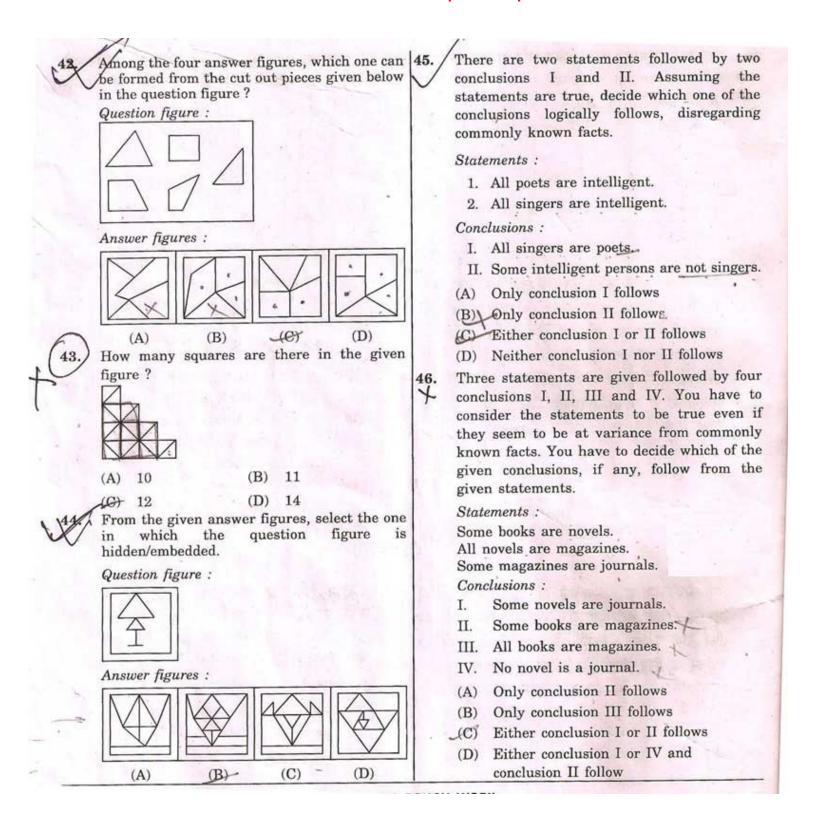
- (A) (O)
- (B)
- (C) 00
- (D) (OO)

In the following figure, which number represents the Women Doctors who are not Employed?



Daily in the morning the shadow of Gol Gumbaz falls on Bara Kaman and in the evening the shadow of Bara Kaman falls on Gol Gumbaz exactly. So in which direction is Gol Gumbaz to Bara Kaman?

- (A) Eastern side
- (B) Western side
- (C) Northern side
- (D) Southern side



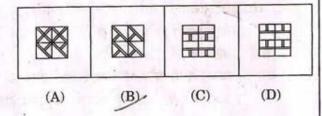


Which answer figure will complete the pattern in the question figure?

Question figure:



Answer figures :



1248

The following small letters are coded by capital letters in a certain way:

s umlad

RAPMSO

Now, which small letters can be decoded from the letters given below:

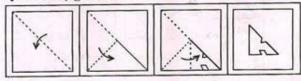
MAPSRO

1 umasd

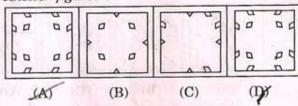
- (A) lumdas
- (B) lumsda
- (C) lumasd
- (D) lumsad

A piece of paper is folded and punched cut as shown below in the question figures. From the given answer figures indicate how it will appear when opened.

Question figures:



Answer figures :



Directions: (Question No. 50) In the following question, there is an address which has been reproduced against (A), (B), (C) and (D), three of which have some mistake or the other. The one without any mistake is your answer.

Meenakshi Sundaram
MIG 17, Housing Board Colony
Near Airport, Amrutsar – 252793

- (A) Meenakshi Sundaram
 MIG 17, Housing Board Colony
 Near Airport, Amrutsar 252973
- (B) Meenakshi Sundaram MIG 17, Housing Board Colony Near Airport, Amrutsar – 252793
- (C) Meenakshi Sundaram MIG 71, Housing Board Colony Near Airport, Amrutsar – 252793
- (D) Meenakshi Sundaram MIG 17, Housing Board Colony Near Airport, Anrutsar – 252793

PART B

GENERAL KNOWLEDGE AND GENERAL AWARENESS

- 51. The three-tier Panchayat Raj system in India was proposed by the
 - (A) Balwant Rai Mehta Committee
 - (B) Ashok Mehta Committee
 - (C) Royal Commission
 - (D) None of the above
- 52. Under which Article of the Constitution is the President's Rule introduced in a State due to the failure of the constitutional machinery?
 - (A) 352
 - (B) 356
 - (C) 360
 - (D) 350
- 53. Through which principle/device did Mahatma Gandhi strive to bridge economic inequalities?
 - (A) Abolition of machinery
 - (B) Establishment of village industries
 - (C) Adoption of non-violence
 - (D) Trusteeship theory
- 54. Who said that "Oh! Disrespectable democracy! I love you!"?
 - (A) G.B. Shaw
 - (B) Carpenter
 - (C) Lord Bryce
 - (D) Appa Dorai

- 55. The adoption of High Yielding Variety Programme in Indian Agriculture started in
 - (A) 1968
- (B) 1967
- (C) 1966
- (D) 1965
- 56. Brown Revolution' is
 - (A) growth of fodder industry
 - (B) growth of sea products
 - (C) growth of milk and milk products
 - (D) growth of food processing and soft drinks industries in India
- 57. The total value of goods and services produced in a country during a given period is
 - (A) Disposable income
 - (B) National income
 - (C) Per capita income
 - (D) Net national income
- Mechanization of Indian agriculture on a considerable scale is not possible due to
 - (A) small holdings
 - (B) lack of tractors
 - (C) poverty of the peasants
 - (D) indifference of the people
- 59. Which one of the following is not a function of the central bank in an economy?
 - (A) Dealing with foreign exchange
 - (B) Controlling monetary policy
 - (C) Controlling government spending
 - (D) Acting as a banker's bank

60.	Which one of the following was the first 65. English ship that came to India?	Which one of the following is a major port on the East Coast of India?
	(A) Elizabeth	(A) Kandla
	(B) Bengal	(B) Vishakhapatnam
		(C) Karikal
	(C) Red Dragon	(D) Pondicherry (Puducherry)
	(D) Mayflower	
61.	The member-states of the U.N.O. have	The approximate circumference of the Earth is
	delegated the primary responsibility for maintaining world peace and security to the	(A) 13,000 km
	(A) General Assembly	(B) 20,000 km
		(C) 25,000 km
4		(D) 30,000 km
		(D) 30,000 km
150	(D) International Court of Justice 67.	When did India join the International
62.	Which one of the following was the last	Tsunami Warning System ?
02.	Buddhist text produced in India ?	(A) 2004 (B) 2005
34	(A) Divya Vandana	(C) 2006 (D) 2007
	(B) Dohakosa 68.	'Cod' is a variety of
	(C) Vajrachedika	(A) Goat
	(D) Vamsathapakasini	(B) Fish
		(C) Crop
63.	Arthasastra was written by	(D) Coral
	(A) Dhanananda 69.	The All India Muslim League was founded
	(B) Kautilya	by .
	(C) Bimbisará	(A) Maulana Ahmed Ali
	(D) Pushyamitra	(B) Mohammad Ali Jinnah
	(b) Tushyamura	(C) Agha Khan
64.	Who translated Ramayana into Persian?	(D) Hakim Ajmal Khan
	(A) Abul Fazl	Golden Revolution refers to
	(B) Badauni 70.	
	(C) Abdul Latif	(A) Sericulture (B) Horticulture
	(D) Isar Das	(C) Apiculture (D) Viticulture

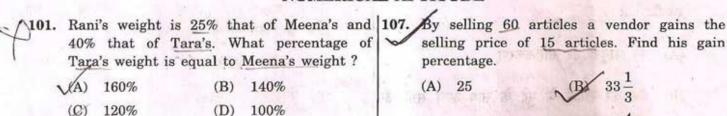
71.	A balloon filled with helium rises in air because	76.	A large number of identical plants can be obtained in a short span of time through
	(A) air exerts an upward force on the		(A) large number of seeds of a single plant
	balloon		(B) stem cuttings (C) -tissue culture technique
	(B) the balloon is weightless		(C) -tissue culture technique (D) hydroponics method
	(C) helium is less dense than air	4 -	(b) hydropolitics means
	(D) helium pushes down on the air below the balloon	77.	The smallest flowering plant is
		-9	(A) Wolffia
72.	One can distinguish a telescope from a microscope by observing		(B) Lemma (C) Azolla
	(A) length		(D) Ficus
-	(B) colour /	9	
	(C) size of the lens	78.	Leukaemia or blood cancer is characterised
	(D) length and size of the lens		by abnormal increase of the
	y the same of the		(A) Red blood cells
73.	The sound produced by a bat is	1	(B) White blood cells
	(A) audible	T	(C) Blood platelets
	(B) subsonic	635	(D) Blood plasma
	(C) infrasonic		
	(D) ultrasonic	79.	The total number of bones in our body is
).	E In	(A) 226 (B) 206
74.	When a bar magnet is cut into two equal halves, the pole strength of each piece		(C) 256 (D) 236
	(A) becomes double	80.	The poison of honey bee is
	(B) becomes half	Tax.	(A) Acidic
	(C) becomes zero		(B) Alkaline
	(D) remains the same	9	(C) Saltish
100	1 THE PART OF STREET	100	(D) Protein
75.	Cooking oil is converted into vegetable ghee by the process of	81.	Birds which swim in water have
	(A) Crystallisation	1	(A) webbed feet
	(B) Condensation	1	(B) broad wings
	(C) Hydrogenation	18/	(C) long beaks
	(D) Oxidation	24	(D) toes with claws

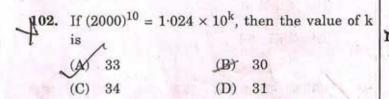
82.	A new technology which provides the ability to create an artificial world and have people interact with it is called (A) Televirtuality (B) Virtual reality	87.	Rusting of iron requires (A) oxygen and carbon dioxide (B) oxygen and water (C) carbon dioxide only (D) oxygen only
83.	 (C) Alternate reality (D) 3-D reality A parallel port is most often used by a (A) Printer 	88.	Glass is a (A) pure solid (B) supercooled liquid (C) gel (D) polymer
	(B) Monitor (C) Mouse (D) External storage device	89.	Uranium eventually decays into a stable isotope of (A) Radium (B) Thorium (C) Lead (D) Polonium
84.	Kuchipudi is a dance-drama associated with the State of (A) Assam (B) Andhra Pradesh (C) Orissa (D) Manipur	90.	Which of the toxic heavy metals is found in modern tannery industries? (A) Nickel (B) Zinc (C) Chromium (D) Lead Which of the following contains high content of lead? (A) Coal
85.	X-rays were discovered by (A) Faraday (B) Roentgen (C) H. Davy (D) Lavoisier	92.	(B) Cooking gas (C) High octane fuel (D) Low octane fuel Electrostatic precipitator is used to control (A) Air pollution
86.	Who among the following is not a recipient of Dadasaheb Phalke Award? (A) V. Shantaram		(B) Water pollution (C) Solid waste (D) Noise pollution
	(B) Raj Kapoor (C) Mukesh Bhatt (D) Lata Mangeshkar	93.	National Environmental Engineering Research Institute is located at (A) Pune (B) Delhi (C) Nagpur (D) Chennai

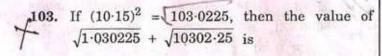
- 94. The government set up a committee headed by the Chairman, Central Board of Direct Taxes some time back to go into
 - (A) codification of tax laws
 - (B) the entire structure of tax laws including the question of imposition of bank tax
 - (C) the concerns of the foreign investors in India with regard to taxation matters
 - (D) aspects of generation of black money, its transfer abroad and bringing back such money into India's legitimate financial system
- 95. Who got the 'Purple Cap' for taking maximum number of wickets in IPL-4 series?
 - (A) Harbhajan Singh
 - (B) Lasith Malinga
 - (C) Daniel Vettori
 - (D) Albie Morkel
- 96. At which place did the Union Finance Minister, Pranab Mukherjee lay the foundation stone for a new banknote paper mill some time back?
 - (A) Surat
 - (B) Aurangabad
 - (C) Mysore
 - (D) Guntur

- 97. The book 'Great Soul: Mahatma Gandhi and His Struggle with India' was in news some time back and was banned in some Indian States including Gujarat. The author of the book is
 - (A) Joseph Lelyveld
 - (B) Michael Ondaatje
 - (C) Jack Welch
 - (D) Duncan Green
- 98. The secret operation carried out successfully by the US Navy Seals, in which Osama Bin Laden, the world's most wanted terrorist was killed, was codenamed as
 - (A) Jasmine
- (B) Rose
- (C) Geronimo
- (D) Cobra
- 99. As per the latest 'Sample Registration Survey Report' released some time back by the Census Office at New Delhi, there has been a significant improvement in the 'Infant Mortality Rate' per 1000 live births in India during the period 1999 2009. What has been the percentage change during this period?
 - (A) 15%
- (B) 29%
- (C) 35%
- (D) 42%
- 100. Premlata Agarwal has become the oldest Indian woman to scale Mount Everest at the age of 45. She belongs to the State of
 - (A) Jharkhand
 - (B) Uttar Pradesh
 - (C) Rajasthan
 - (D) Bihar

NUMERICAL APTITUDE







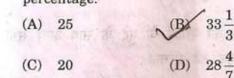
104. If
$$\sqrt{0.04 \times 0.4 \times a} = 0.004 \times 0.4 \times \sqrt{b}$$
, then the value of $\frac{a}{b}$ is

(A)
$$16 \times 10^{-3}$$
 (B) 16×10^{-4} (C) 16×10^{-5} (D) 16×10^{-6}

The smallest among
$$\sqrt[6]{12}$$
, $\sqrt[3]{4}$, $\sqrt[4]{5}$, $\sqrt{3}$ is (A) $\sqrt[6]{12}$ (B) $\sqrt[3]{4}$

106 When a number is divided by 36, the remainder is 19. What will be the remainder when the number is divided by 12?

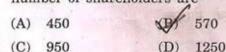
selling price of 15 articles. Find his gain percentage.



A shopkeeper marks an article at ₹ 60 and sells it at a discount of 15%. He also gives a gift worth ₹ 3. If he still makes 20% profit, the cost price, in rupees, is

On a certain sum of money lent out at 16% p.a. the difference between the compound interest for 1 year, payable half yearly, and the simple interest for 1 year is ₹ 56. The sum is

Out of 2500 people, only 60% have the saving habit. If 30% save with bank, 32% with post office and the rest with shares, the number of shareholders are



A person bought 50 pens for ₹ 50 each. He sold 40 of them at a loss of 5% He wants to gain 10% on the whole. Then his gain percent on the remaining pens should be

is 45. x is greater than the average of y and z by 9. The average of y and z is greater than y by 2. Then the difference of x and z is

- (A) 3
- (B) 5
- (CX 7
- (D) 11

113. If x: y = 3: 4, 4x + 5y: 5x - 2y =

- (A) 7:32
- (B) 32:7
- (C) 4:3
- (D) 5:2

4. The incomes of A and B are in the ratio 2:3 and their expenditures are in the ratio 1:2. If each saves ₹ 24,000, find A's income.

- (A) ₹ 24,000
- (B) ₹ 72,000
- (C) ₹ 19,200
- ₹ 48,000

115 In a mixture of 25 litres, the ratio of acid to water is 4: 1. Another 3 litres of water is added to the mixture. The ratio of acid to water in the new mixture is

- (A) 5:2
- (B) 2:5
- (C) 3:5
- (D) 5:3

A and B working together, can do a piece of work in $4\frac{1}{2}$ hours. B and C working together can do it in 3 hours. C and A working together can do it in $2\frac{1}{4}$ hours. All of them begin the work at the same time. Find how much time they will take to finish the piece of work.

- (A) 3 hours
- (B) 2 hours
- (C) 2.5 hours
- (D) 3.25 hours

On a certain sum, the simple interest at the end of $6\frac{1}{4}$ years becomes $\frac{3}{8}$ of the sum. The rate of interest is

- (A) 5%
- (B) 6%
- (C) 7%
- (D) 8%

118. A shopkeeper lists the price of an article as ₹ 500. But he gives a certain discount which allows the buyer to pay ₹ 500 for the article including 10% sales tax. The rate of discount is

- (A) 10%
- (B) $10\frac{1}{11}\%$
- $\sqrt{9} \frac{1}{11} \%$
- (D) 11% RXSS

119. After allowing a discount of 16%, there was still a gain of 5%. Then the percentage of marked price over the cost price is

- (A) 15%
- (B) 18%
- (C) 21%
- 1 00 25%

Mean of 10 numbers is 30. Later on it was observed that numbers 15, 23 are wrongly taken as 51, 32. The correct mean is

- (A) 25.5
- (B) 32
- (C) 30
- (D) 34·5

Of the three numbers, the first number is twice of the second and the second is thrice of the third number. If the average of these 3 numbers is 20, then the sum of the largest and smallest numbers is

- (A) 24
- 19 42
- (C) 54
- (D) 60

122.	A and B together can do $\frac{11}{19}$ of a work. In the
	same time B and C together can do $\frac{14}{19}$ of the
	same work. The ratio of work done by A, B and C is

- (A) 3:4:5
- (B) 4:5:7
- (C) 5:6:8
- (D) 5:7:8

123. The speed of the current is 5 km/hour. A motorboat goes 10 km upstream and back again to the starting point in 50 minutes. The speed, in km/hour, of the motorboat in still water is

- (A) 20
- (B) 26
- (C) 25
- (D) 28

124. A man has to be at a certain place at a certain time. He finds that he shall be 20 minutes late if he walks at 3 km/h speed and 10 minutes earlier if he walks at a speed of 4 km/h. The distance he has to walk is

- (A) 24 km
- (B) 12.5 km
- (C) 10 km
- (D) 6 km

125. Pipes P and Q can fill a tank in 10 and 12 hours respectively and C can empty it in 6 hours. If all the three are opened at 7 a.m., at what time will one-fourth of the tank be filled?

- (A) 10 a.m.
- (B) 10 p.m.
- (C) 11 p.m.
- (D) 11 a.m.

The radius of the incircle of a triangle is 2 cm. If the area of the triangle is 6 cm², then its perimeter is

- (A) 2 cm
- (B) 3 cm
- (C) 6 cm
- (0) 9 cm

127. The total surface area of a solid right circular cylinder is twice that of a solid sphere. If they have the same radii, the ratio of the volume of the cylinder to that of the sphere is given by

- NA 9:4
- (B) 2:1
- (C) 3:1
- (D) 4:9

128. The base of a solid right prism is a triangle whose sides are 9 cm, 12 cm, and 15 cm. The height of the prism is 5 cm. Then, the total surface area of the prism is

- (A) 180 cm²
- (B) 234 cm²
- (C) 288 cm²
- (D) 270 cm²

surface area of a rectangular box are 12 cm and 94 cm² respectively, then the maximum length of a stick that can be placed inside the box is

- (A) 5√2 cm
- (B) 5 cm
- (C) 6 cm
- (D) $2\sqrt{5}$ cm

130. Each interior angle of a regular polygon is

18° more than eight times an exterior angle.

The number of sides of the polygon is

- (A) 10
- (B) 15
- (c) 20
- (D) 25

- 731. The length of each side of an equilateral triangle is $14\sqrt{3}$ cm. The area of the incircle, in cm², is
 - (A) 450
- (B) 308
- (C) 154
- (D) 77
- 132. Three circles of diameter 10 cm each, are bound together by a rubber band, as shown in the figure.

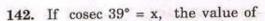


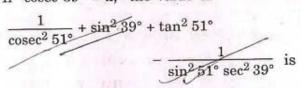
The length of the rubber band, in cm, if it is stretched as shown, is

- (A) 30
- (B) 30 + 10π
- (C) 10n
- (D) 60 + 20n
- 133. The ratio of the areas of two isosceles triangles having the same vertical angle (i.e. angle between equal sides) is 1:4. The ratio of their heights is
 - (A) 1:4
- (B) 2:5
- (C) 1:2
- (D) 3:4
- 134 If a chord of length 16 cm is at a distance of 15 cm from the centre of the circle, then the length of the chord of the same circle which is at a distance of 8 cm from the centre is equal to
 - (A) 10 cm
- (B) 20 cm
- (C) 30 cm
- (D) 40 cm
- 135. The minimum value of $2 \sin^2 \theta + 3 \cos^2 \theta$ is
 - (A) 0
- (B) 3
- 100 2
- (D) 1

- 136. If the sum of $\frac{a}{b}$ and its reciprocal is 1 and $a \neq 0$, $b \neq 0$, then the value of $a^3 + b^3$ is
 - (A) 2
- (B) 1
- Jer 0
- (D) 1
- 137. If $x^2 + y^2 + \frac{1}{x^2} + \frac{1}{y^2} = 4$, then the value of $x^2 + y^2$ is
 - 1 (A) 2
- (B) 4
- (C) 8
- (D) 16
- 138. If $x^2 = y + z$, $y^2 = z + x$, $z^2 = x + y$, then the value of $\frac{1}{x+1} + \frac{1}{y+1} + \frac{1}{z+1}$ is
 - (A) -1
- JB) 1
- (C) 2
- (D) 4
- 139. If $x + \frac{1}{x} = \sqrt{3}$, then the value of
 - $x^{18} + x^{12} + x^6 + 1$ is
- 1 7 44-13 20

- (C) 2
- (D) 3
- 140. If $a^2 + b^2 = 2$ and $c^2 + d^2 = 1$, then the value of $(ad bc)^2 + (ac + bd)^2$ is
 - (A) $\frac{4}{9}$
- (B) $\frac{1}{2}$
- (C) 1
- CODY 2
- 141. Two medians AD and BE of ΔABC intersect at G at right angles. If AD = 9 cm and BE = 6 cm, then the length of BD, in cm, is
 - (A) 10
- (B) 6
- (9) 5
- (D) 3





(A)
$$\sqrt{x^2-1}$$

(B)
$$\sqrt{1-x^2}$$

(C)
$$x^2 - 1$$

(D)
$$1 - x^2$$

143. The value of tan 4° tan 48° tan 47° tan 86° is

144. If
$$\frac{\tan \theta + \cot \theta}{\tan \theta - \cot \theta} = 2$$
, $(0 \le \theta \le 90^\circ)$, then the

value of $\sin \theta$ is

$$(A) \quad \frac{2}{\sqrt{3}}$$

$$\sqrt{\frac{1}{8}} \sqrt{\frac{\sqrt{3}}{2}}$$

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

145. If the angle of elevation of the Sun changes from 30° to 45°, the length of the shadow of a pillar decreases by 20 metres. The height of the pillar is

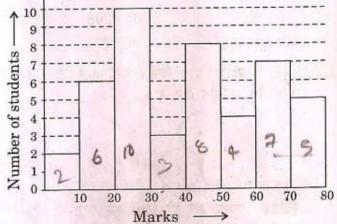
(A)
$$20 (\sqrt{3} - 1) \text{ m}$$

(B)
$$20 \left(\sqrt{3} + 1\right) \text{ m}$$

(C)
$$10(\sqrt{3}-1)$$
 m

(25)
$$10(\sqrt{3}+1)$$
 m

Directions: The histogram shows the marks obtained by 45 students of a class. Look at the histogram and answer the questions no. 146 to 150.

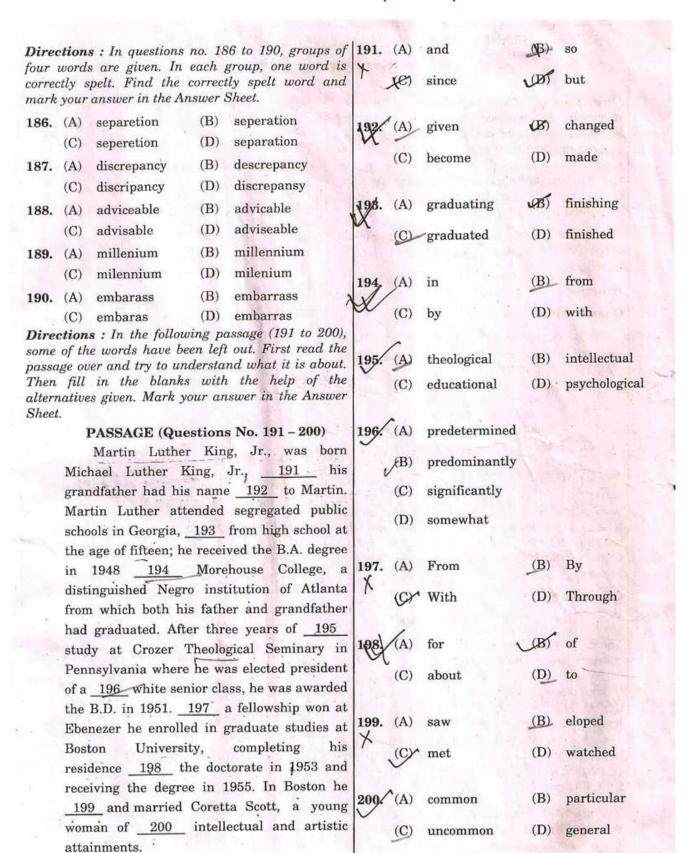


How many students have obtained marks 50 and above ?

PART D ENGLISH COMPREHENSION Directions: In questions no. 151 to 155, some of the sentences have errors and some are correct. Find out which part of a sentence has an error and blacken the rectangle [] corresponding to the appropriate letter (A, B, C). If a sentence is free from errors, blacken the rectangle corresponding to (D) in the Answer Sheet. The way to increase the production of the food / is to bring more land / under cultivation. / No error. (D) (A) 152. The girls watched intently / as the model applied her make-up / with a practiced hand. / No error. (B) (A) If he is a millionaire / he would help / the millennium project. / No error. (A) The Prime Minister along with his Cabinet colleagues / (A) have been welcomed by the Chief Minister / at a formal ceremony. / No error. (C) (D) The political candidate talked / as if she has already been elected / to the presidency. / No error. -(B) (C) (A) Directions: In questions no. 156 to 160, sentences 15%. Many people reported in the night. are given with blanks to be filled in with an appropriate word(s). Four alternatives are suggested (A) to hear for each question. Choose the correct alternative out (B) having heard of the four and indicate it by blackening the to have heard appropriate rectangle [] in the Answer Sheet. (D) been hearing She made her stepson her her large fortune. 159. I am exhausted, let's hare (A) call it heir call at (B) (B) hair (C) call off (D) here (D) call in The worker used to patch up passenger | 169. stewardess showed the the hole in the wall. (A) when to start travelling sand (A) where to land the plane cement (2) how to fasten the seat belt soil (D) how to judge the altitude of the plane (D) grass

Directions: In questions no. 161 to 165, out of the Directions: In questions no. 171 to 175, four alternatives are given for the Idiom/Phrase four alternatives, choose the one which best expresses underlined in the sentence. Choose the alternative the meaning of the given word and mark it in the which best expresses the meaning of the given Answer Sheet. Idiom | Phrase and mark it in the Answer Sheet. 161. Flaunt 171. The teacher's announcement to conduct a deceive (B) (A) cut snap test came as a bolt from the blue to (D) blame (C) exhibit many students. 162. Subjugate (A) imaginary conquer (B) (A) capitulate (B) unexpected confuse (D) (C) strike forbidden 163. Behaviour heavenly (D) (A) conduct blessing 172. He and his friend are sailing in the same response (C) character (D) boat. 164. Stringent (A) sailing together in the same boat inflexible (B) (A) flexible social and the financial sharing tough (C) staunch condition being in the same difficult situation 165. Deliberately inadvertently (A) spontaneously getting rid of the difficult situation naturally (C) intentionally (D) To be successful in today's world, we require Directions: In questions no. 166 to 170, choose the the gift of the gab. word that is opposite in meaning to the given word (A) ability to speak well and mark it in the Answer Sheet. (B) good interpersonal skills 166. Brittle divine help and guidance (A) weak a fierce competitive spirit bright (C) fragile 174. Winter was so bad that the nomadic 167. Callous tribesmen found it difficult to keep the wolf insensitive (A) rude from the door. sympathetic (C) indifferent (A) hunt wild animals 168. Dishevelled (B) escape starvation (B) tidy (A) composed get woollen clothes (C) confident jovial (D) walk on ice 169. Impede 175. There is no soft option to the crisis now. advance (A) obstruct popular opinion guarantee (A) (C) linger popular solution (B) 170. Perilous easy and agreeable option (0) impetuous (B) (A) carefree difficult choice (D) impure (C) safe (D)

Directions: In questions no. 181 to 185, out of the Directions: In questions no. 176 to 180, a sentence four alternatives, choose the one which can be is given, the underlined part of which may need substituted for the given words/sentence and improvement. Alternatives are given at (A), (B) and indicate it by blackening the appropriate rectangle (C) below which may be a better option. In case no [] in the Answer Sheet. improvement is needed, your answer is (D). Blacken the appropriate rectangle [] in the Answer Sheet. 181. Speed of an object in one direction 176. With these extra people you can work easily with this job. (A) pace (B) tempo (A) deal (C) velodrome (B) improve (R) velocity (C) cope \ (D) No improvement 182. The place where public, government or 177. I visited my aunt just before a week. historical records are kept (A) Coffer (A) a week before a week earlier (B) Pantry (C) Archives a week ago (D) Scullery (D) No improvement 178. Foreigners often come across with serious Theft of another person's writings or ideas and passing them off as one's own difficulties in studying English. plagiarism (A) have to come across with burglary (B) come cross with (C) piracy ·(C) come across V (D) pilferage No improvement 179. He work hard will succeed. 184. The study of insects (A) who will work hard (A) Anthropology (B) who will be working hard (B) Zoology (e) who works hard (C) Etymology (D) No improvement (D) Entomology 180. It is high time you started revising your 185. List of issues to be discussed at a meeting lessons. (A) schedule (A) start (B) agenda had started (B) (C) time-table will start plan No improvement



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