



### **General Knowledge Full Marks-100** Time-2<sup>1</sup>/, hours

1. Why is the sky blue in colour during the day? 2. When was the first session of the Lok Sabha held? 3. What is the quorum to constitute a sitting of the Lok Sabha? 4. What is the legislative relationship between the Lok Sabha and the Rajya Sabha? 5. What is the difference between Adjournment and Prorogation of the Lok Sabha? 6. What makes a diamond shine and sparkle? 7. What is Smog and how is it harmful? 8. How does photosynthesis take place? 9. What is Doppler effect? 10. What is the difference between Myopia and Hypermetropia? 11. Name the four states of matter. 12. Why does bursting a balloon make a sound? 13. What is the utility of Black Box in an airplane? 14. How does a domain like google.com get converted to an IP address ? 15. How is Human Development Index measured? 16. What is Biodiversity? 17. What is Bombay Blood Group? 18. How does a maglev train work? 19. What is the difference between DNA and RNA? 20. What is the role of Sympathetic Nervous System? 21. How does Nuclear Fusion take place? 22. What is the Montreal Protocol? 23. What is catalysis? 24. How does a galvanic cell work? 25. What is phosphorescence? 26. What is gypsum? [1] JDA/GK

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27. How do antibiotics work?

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28. What is the difference between Bacteria and Virus?

29. What is the difference between Nationality and Citizenship?

30. What is the difference between a Bill and an Act?

31. What is a hung parliament?

32. Why does ice packed in sawdust not melt quickly?

33. What are the constituents of biogas?

34. What is sullage water treatment process?

35. What are the four stages in mitosis?

36. What products are formed when sodium bicarbonate is heated ?

37. Why is carbon dioxide used in a fire extinguisher?

38. What was the structure of the Indian Constitution when it was introduced ?

39. By which legislation was India and Pakistan divided as two independent nations?

40. What was the Mountbatten plan?

41. State the Fundamental Rights as given in the Constitution of India.

42. What is Pasteurisation?

43. What is Hydroponics?

44. What is petrified wood?

45. What is total internal reflection?

46. What is vulcanisation?

47. What is superconductivity?

48. W.r.t. computers, what is a compiler?

49. Why does sound travel faster in solids than liquids and gases ?

[2]

50. How is data stored on a magnetic disk?

JDA/GK





#### PART-A: ENGLISH

c) for

#### **Marks** : 100

Each question carry 1 mark:

Directions : Fill in the blanks with appropriate prepositions/adverbs.

1. He threw stones		his attacker,
trying to drive th	em away.	d) a feeling of
a) at	h) to	with a situatio

c) for d) after	a) at	0)10
	c) for	d) after

2. Sally made a point coming late so that everyone would look at her.

a) of	b) for
c) on	d) to

3. If you do not comply the traffic regulations you will get into trouble with the police.

a) over	b) with
c) by	d) to
acceptable .	ing is coord or

accordance with the 4. wishes of my people" the president said, "I am retiring from public life.'

a) for	b) in	
c) on	d) with	
5. I was so afraid	missing the train	n
that I took a taxi to t	he station.	
a) by	b) at	

, ,		
c) from	d) of	14

6. I was the impression that I had paid you for the work you did for me.

a) on	b) at	
c) under	d) in	
	ig the day off and spending	20

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it

the seasitore .	
b) in	
d) by	

8. Don't ask the office for information. I will provide you all the

1

	sterr to the enven word t.
information you ne	eed.
a) over	b) with
c) for	d) up
9. I object	being kept waiting.
Why are you alwa	sys late for appointments?
a) at	b) to

people who 10. I disapprove make all sorts of promises which they have no intention of keeping.

d) over

a) by	b) on
c) to	d) of

Directions: Some parts of the sentences have errors and some are correct. Find out which part of the sentence has an error and choose it corresponding to the appropriate letter (a,b,c). If a sentence is free from error, choose (d) in the Answer Sheet.

11. I told (a) / these news (b) / to his father (c) / No error.(d)

12. Give me (a) / some pieces (b) / of blotting paper(c) / No error.(d)

13. What happen (a) / if I press (b) / this button? (c) / No error.(d)

14. If you pass (a) / your examinations (b) / we have celebration (c) / No error.(d)

15. What I doing (a) / if I hear (b) / the burglar alarm? (c) / No error.(d)

16. If anyone attacked me (a) / my dog jumping (b) / at his throat (c) / No error.(d)

17. If he were in (a) / he would (b) / answer the phone (c) / No error.(d)

18. After talking for ten minutes (a) / I succeeded in convinced (b) / him that there was no danger (c) / No error.(d)

19. Was he fined (a) / for driving (b) / without lights (c) / No error.(d)

20. I am looking (a) / forward to (b) / see you

JDA

III





### DO NOT OPEN THE BOOKLET UNTIL YOU ARE TOLD TO DO SO

### **QUESTION BOOKLET**

SERIES III

#### Subject : General English, General Knowledge, Arithmetic & Aptitude

BOOKLET SERIAL NO. 903451

Marks : 300

DA

Time: 3 (three) hours

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

### **INSTRUCTIONS TO CANDIDATES**

1. This booklet contains 250 questions to be answered in a separate OMR Answer Sheet using Black Ball Pen in following three parts.

Part-A-General English : 100 questions, Part-B-General Knowledge : 50 questions and Part-C-Arithmetic & Aptitude : 100 questions.

2. All Questions are compulsory.

- 3. You will be supplied the Answers sheet separately by the invigilator. You must complete the details of particulars asked for.
- 4. Answers must be shown by completely blackening the corresponding circles in the Answers Sheet against the relevant question number by Black Ball Pen. OMR Answer Sheet without marking series/ double series marking shall not be evaluated.

Example :

Supposing the following question is asked :-

The Capital of Meghalaya is-

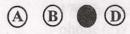
- A. Guwahati
- B. Kohima
- C. Shillong

D. Delhi

You will have four alternatives in the Answer Sheet for your response corresponding to each question of the Question Booklet as below :-



In the above illustration, if your chosen response is alternative C i.e. Shillong, then the same should be marked on the Answer Sheet by blackening the relevant circle with a Black Ball Point Pen only as below :-



#### WHICH IS THE ONLY CORRECT METHOD OF ANSWERING:

- 5. 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 one question.
- 6. There will NOT be any negative marking for wrong answers.
- 7. The Answer Sheet must be handed over to the invigilator before you leave the Examination Hall.
- 8. No rough work is to be done on the Answer Sheet. Space for rough work has been provided in the question booklet.



#### (c) / No error.(d)

### Directions : Choose the meaning which is closest to the given word :

21. Cliche-

a) phrase used so often that it no longer has much meaning

- b) to make a short sharp sound
- c) to hold something tightly
- d) line, route or journey around a place.
- 22. Egoist-

a) a person who thinks that he or she is better than other people

b) a bird of the Heron family

c) the act of leaving a place

d) an activity that somebody does because it makes them feel good and important.

23. Dissent-

a) of good enough standard or quality

b) to come or go down from a higher to a lower level

c) sweet dish after meals

d) the act of having or expressing opinions that are different from those that are officially accepted.

#### 24. Defer-

a) fault in something or in the way it has been made which means that it is not perfect

b) to delay something until a later time

c) to make something dirty

d) openly refusing to obey someone/ something sometimes in an aggressive way.

25. Counsel-

a) piece of advice

b) a group of people who are elected to govern an area such as a city or country

c) accepted way of behaving in a society 2

d) small group of people who have the same interests.

26. Compliment-

a) to add something in a way that improves it or makes it more attractive

b) a reason for not being satisfied

c) a remark that expresses praise or admiration of somebody

d) a feeling of satisfaction with yourself or with a situation.

27. Coarse-

a) the land beside or near to the sea or ocean

b) a series of lessons or lectures on a particular subject

c) direction or route followed by a ship or an aircraft

d) rough

#### 28. Apprise-

a) to think that somebody is praise worthy

b) something is good or acceptable

c) to tell or inform somebody of something

d) to catch somebody and arrest them

29. Piety-

a) quiet and calm, not worried or disturbed in any way

b) a strange or unusual feature or habit

c) the state of having or showing a deep respect for God and religion

d) appropriate to a particular situation.

30. Populous-

a) where a large number of people live

b) liked or enjoyed by a large number of people

c) all the ordinary people of a particular country or area

d) type of politics that claims to represer the opinions and wishes of ordinary peopl



Directions: Change into indirect speech :

- 31. Bob said, "It is very warm for May."
  - a) Bob told that it is very warm for May.
  - b) Bob shouted that it was warm for May.
  - c) Bob said that it was very warm for May.
  - d) Bob said that it is very warm for May.
- 32. Bill added, "There is a nice breeze."

a) Bill said that there is a nice breeze.

b) Bill added that there was a nice breeze.

c) Bill retorted that there was a nice breeze.

d) Bill continued to say that there was a nice breeze.

33. Their friends said, "You had better take sweaters with you."

a) Their friends shouted to them to take

their sweaters with them.

b) Their friends remarked to them to take their sweaters with them.

c) Their friends advised them to taking their sweaters with them.

d) Their friends advised them to take their sweaters with them.

#### 34. "I'll be there," Tom said.

- a) Tom replied that he will be there.
- b) Tom told that he will be there.
- c) Tom said that he will be there.
- d) Tom said that he would be there.

35. Then Professor Miller said, "There is going to be a meeting of the Economics Club on Friday."

a) Professor Miller then added that there was going to be a meeting of the Economics Club on Friday.

b) Then Professor Miller said that there is going to be a meeting of the Economics Club on Friday.

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c) Professor Miller added that there is

going to be a meeting of the Economics Club on Friday.

d) Professor Miller said that there was going to be a meeting of the Economics Club on Friday.

Directions:Read the following sentences, supplying the most appropriate tense of the verbs in brackets.

36. Tom	landscapes in modern
designs.	
a) painted	b) paint
c) paints	d) painting
37. Не	several awards for
his designs.	
a) receive	b) receives
c) received	d) receiving
38. Не	his first picture just
one year ago.	
a) sell	b) sells
c) sold	d) selling
39. He	over fifty pictures since
then. a part of deb	0. a) amature (b) ama
a) sell	b) sells
c) sold	d) selling
40. Dick	in a bank, but he
doesn't any more.	c) mischelvous
a) work	b) works
c) worked	d) working
41. He	his job at the bank two
years ago.	c) prodigy bring d) pro
a) leave	b) leaves
c) left	d) leaving
42. He	_several different jobs since
then.	c) hipocricy d) hep
a) have	b) has
c) had	d) has had
43.He	a job for three months.
a) look for	b) looked for

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c) looking for	d) looks for
44. Betty was fourteen.	to play tennis when she
a) learn	b) learns
c) learned	d) learning
45. She time.	every summer since that
a) play	b) plays

c) played d) playing

Directions : Four words are given in each question, out of which only one word is correctly spelt. Find the correctly spelt word and mark in the Answer Sheet.

46.	a) benafit	b) banifit
	c) benefit	d) beniffit
47.	a) begining	b) beginning
	c) begening	d) biginning
48.	a) enundo	b) enuwendo
	c) innuendo	d) iniendo
49.	a) mimicing	b)mimiking
	c) mimeking	d) mimicking
50.	a) amature	b) ameture
	c) amateur	d) amesure
51.	a) mischiefvious	b) mischievous
	c) mischefvous	d) mischivious
52.	a) labotory	b) laborototy
	c) laboratory	d) labaratoty
53.	a) protogy	b) protogi
	c) prodigy	d) prodegy
54.	a) ocasionally	b) occassonally
	c) occasionaly	d) occasionally
55.	a) hypocricy	b) hypocrisy

c) hipocricy

d) hepocrisy

Directions: Improve the bold part in each of the following sentences, if needed.

56. I was delighted to see him fully recover.

a) him fully recovered

'b) he fully recovered

c) his fully recovery

d) No improvement needed.

57. They didn't pay any heed to their superior's instructions; I did neither.

a) I either did

b) Neither didn't

c) Nor did I

d) No improvement needed.

58. The fast train **came a halt to before** crossing the bridge.

a) came before to a halt

b) came to a halt to

c) came to a halt before

d) No improvement needed.

59. I can always **count on him** in times of difficulty.

a) count with him

b) count him on

c) count him

d) No improvement needed.

60. It was so dark that the children were terribly frightened.

a) had terrible frightened

b) were terribly frightening

c) were terrible frightened

d) No improvement needed.

61. He took a longer time to read the text<sup>o</sup> for he wanted **to go about it carefully.** 

a) go at it casually

b) go through it carefully

c) go through it hurriedly

d) No improvement needed.

III



62. Your suggestion is **no different from the** other employees.

- a) not different from
- b) not different than the
- c) not different from that of the
- d) No improvement needed.

63. Though his actions were severe criticised, he didn't lose his temper.

- a) were severe criticism
- b) had severe criticise
- c) were severely criticised
- d) No improvement needed.

64. He was **untiring in** his efforts to eliminate unnecessary controls.

- a) untried in
- b) untried of
- c) untiring into
- d) No improvement needed.

65. The purchase made by him **brought with** him a number of prizes.

- a) brought him
- b) brought up to him
- c) brought with himself
- d) No improvement needed.

Directions : Give the antonyms of the following words

b) Discourteous

d) Unrespectful

b) Unrefutable

d) Non-refutable

66. Courteous :

- a) Disrespect
- c) Uncourteous
- 67. Refutable :
  - a) Irrefutable
  - c) Disrefutable

68. Perceptible :

- a) Unperceptible b) Misperseptible
- c) Imperceptible d) Non-perceptible
- 69. Temperance :

a) Imtemperence	b) Intemperance			
c) Untemperence	d) Distemperence			
Removable :				
a) Unremovable	b) Imremovable			
c) Irremovable	d) Disremovable			
Honest :	alis habits			
a) Unhonest	b) Dishonest			
c) Crooked	d) Deceiver			
Minor:				
a) Small	b) Little			
c) Major	d) Insignificant			
Interior:				
a) Inside	b) Exterior			
c) Innermost	d) Inner circle			
Advance:				
a) Go before	b) Retreat			
c) To add more	d) To relax			
Debtor :				
a) Full of debts				
b) A person who owes money				
c) One who forgives				
	A VERIOV AL			

Directions : Choose the meaning which is closest to the given phrases / idioms.

76. Good humour :

d) Creditor

70.

71.

72.

73.

74.

75.

a) something humorous

- b) a cheerful state of mind
- c) a proper humour
- d) a decent humour

77. A queer fish :

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a) a strange fish

b) a fish which is uncommon

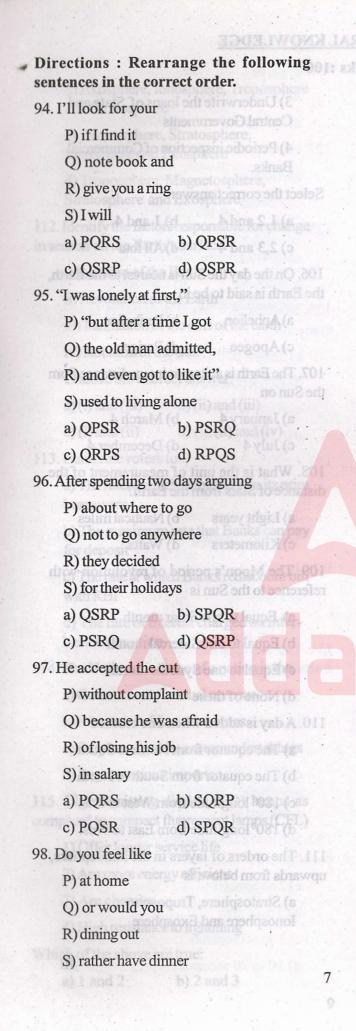
- c) a colloquialism for an eccentric person
- d) a fish which is interesting



78. The crux of the question : a) the question is difficult b) the question is simple c) the question is important d) the central point on which the issue turns 79. Bad blood : a) The blood is infected b) Vicious temper, active enmity c) Bad relationship d) Cannot use the blood for some reason 80. An arch look : a) Asly, significant look b) A startled look c) Aquestioning look d) An angry look 81. Advanced in years : a) Made progress b) Growing old c) Development in years d) Success and prosperity 82. A jaundiced eye : a) A yellow eye b) To be short-sighted c) A prejudiced eye d) Critical eye 83. A slow coach : a) A person who is slow in his mental or bodily movements b) A special coach c) A coach which is slow d) A train 84. A standing joke : a) A joke shared while standing b) A continuous subject for mirth or ridicule

c) A lasting joke d) A joke on the subject standing. 85. A light-fingered person : a) A person who is skilful with her / his hands b) A person who plays the piano c) One given to pilfering, clever in small thefts d) One who massages with light fingers Directions : Give the synonyms of the following words: 86. CORPULENT a) Lean b) Gaunt c) Emaciated d) Obese 87. BRIEF a) Limited b) Small c) Little d) Short 88. EMBEZZLE a) Misappropriate b) Balance c) Remunerate d) Clear 89. VENT a) Opening b) Stodge d) Past tense of go c) End 90. ALERT a) Energetic b) Observant c) Intelligent d) Watchful 91. ADVERSITY a) Failure b) Helplessness c) Misfortune d) Crisis 92. STRINGENT a) Dry b) Strained c) Rigorous d) Shrill 93. LAMENT a)Complain b) Comment c) Condone d) Console emperance

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EN]	a) PQRS	b) RQSP
M	c) PQSR	d) SRQP
99.1	In Animal Farm	m Casimos nattaana dan J
	P) but he warr	
	Q) urged the a	
	R) to rebel aga	
	S) not to adop	<ul> <li>b) A bigh pressure system</li> </ul>
	a) QRPS	b) SPRQ
	c) QPRS	d) QSPR
100	. If you want the	the state in the second second second
	P) remember	A particulary
	Q) to leave you	rate/s amesaud right #/dn
	TOLAL TRUE TO	le outside your door
	S) in the morni	Cont Thomas
	a) PSQR	b) QSPR
	c) SQPR	d) RSPQ
		c) India and China viter
		d) China and Russian o
		03. Which counties lie on
	c) Electromag	
		a) India and Bangladesh
10	The Plonning	b) India and Palestan
acce		c) India and Congourd
	indick 38	d) India and China
		04. Direct Taxation is a better
	A microwave	oven cooks food faster
		ay it retories inore a fa
		b) It can be more easily
		notexet rely availant toy
		setting them into ville allow
		ghl Hibra arcalettar (gou) 05. Which of the fillewing
		of the Reserve Bank of Judia
		1) Issue of Bank potes o
		a manufacture and a second of a

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#### PART-B: GENERAL KNOWLEDGE

### Marks :100 Marks in ognesses another

Each question carries 2 marks:

101. What is a Cyclone?

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a) A low pressure system with clockwise winds in the Northern hemisphere

> b) A high pressure system with anticlockwise winds in the Northern hemisphere

c) A low pressure system with anticlockwise winds in the Northern hemisphere

d) A high pressure system with clockwise winds in the Northern hemisphere

102. Which countries are separated by the Durand Line?

a) India and Pakistan

b) India and Afghanisthan

c) India and China

d) China and Russia

103. Which counties lie on either side of the Radcliffe Line?

a) India and Bangladesh

b) India and Pakistan

c) India and Yangon

d) India and China

104. Direct Taxation is a better form of taxation because

a) It fetches more revenue

b) It can be more easily collected

c) It allows for taxation according to means

d) It has greater tax compliance.

105. Which of the following are the functions of the Reserve Bank of India?

1) Issue of Bank notes of all denominations

2) Lender of the last resort

3) Underwrite the loans of State and Central Governments

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4) Periodic inspection of Commercial Banks.

Select the correct answer:

a) 1,2 and 4	b) 1 and 4
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c) 2,3 and 4 d) All for $d$
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106. On the day the Sun is nearest to the Earth, the Earth is said to be in

a) Aphelion	b) Perihelion
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c) Apogee d) Perigee

107. The Earth is at its maximum distance from the Sun on

a) January 4	b) March 4
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c) July 4 d) December 4

108. What is the unit of meaurement of the distance of Stars from the Earth?

a) Light years	b) Nautical miles

c) Kilometers d) Watts

109. The Moon's period of revolution with reference to the Sun is

a) Equal to one Solar month

b) Equal to one Sidereal month

c) Equal to one Synodic month

d) None of these

110. A day is added when one crossed

a) The equator from North to South

b) The equator from South to North

c) 180° longitude from West to East

d) 180º longitude from East to West

111. The orders of layers in the atmosphere, a upwards from below, is

a) Stratosphere, Troposphere, Ionosphere and Exosphere

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b) Exosphere, Ionosphere, Troposphere and Stratosphere

c) Troposphere, Stratosphere, Ionosphere and Exosphere

d) Troposphere, Magnetosphere, Stratosphere and Exosphere

112. Identify the factors responsible for change in season on the Earth's surface.

i) Rotation of the Earth

ii) Revolution of the Earth

iii) Inclination of the axis of the earth

iv) Rotation of the Sun

Choose the coorect answer:

a) (i) and (iii) b) (ii) and (iii)

c) (i) and (ii) d) (i), (ii) and (iv)

113. Bank rate refers to

a) The rate at which Banks lend to its prim borrowers

b) The maximum rate that Banks can pay for deposit

c) The rate at which Banks rediscount bill with RBI

d) The rate of interest charged on interbank transaction

114. The National income of a nation is the

a) Governments' annual revenue

b) Sum total of factor incomes double (d

c) Surplus of public sector undertakings

d) Exports minus imports

115. Light emitting diode (LED) lamps as compared to compact fluorescent lamps (CFL)

1) Offer longer service life

2) Are more energy efficient

3) Are cheaper

4) High resistance to lightining

b) 2 and 3

Which of the above are true:

a) 1 and 2

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### c) 3 and 4 d) All four

116. The failure of light to travel strictly in a straight line is known as

- a) Dispersion b) Polarisation
- c) Refraction d) Diffraction

117. A body would weigh more at the poles than at the equator because

1) Equatorial radius is greater than the polar radius

2) The Earth rotates about its axis

3) The Poles are covered with thick snow

4) Polar radius is greater than equatorial radius

Select the correct answer :

a) ]	1	and 2	b) 3 and 4

c)	2 and 4	d) All four
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118. X-rays are actually

a) Slow moving electrons

b) Fast moving electrons

c) Electromagnetic waves

d) Slow moving neutrons

119. The Planning Commission was set up in accordance with the Directive Principle in

a) Article 38 b) Article 39

c) Article 83C d) Article 51A

120. A microwave oven cooks food faster because

1) Microwaves carry lot of energy

2) Microwaves are directly absorbed by food molecules setting them into vibrations

3) Very little energy is wasted in heating utensil and the surroundings

a) 1 only	b) 2 only
c) 2 and 3	d)All

121. Oil is sprinkled on stagnant water as it

1) Lowers the surface tension of water

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2) Drowns and kill the mosquito larvae

3) Repels mosquities due to its pungent smell

Choose the correct answer :

a) 2 only	b) 3 only	
c) 2 and 3	d) 1 and 2	

122. Television viewers using dish antenna to receive Satellite signals do not receive signals during rain because

1) Their antennas are small

2) Rain droplets disperse the energy of radio waves from their original direction

3) Rain droplets absorb the energy of radio waves

Which of the above statements are correct :

- a) 1 only b) 2 only bas 1 (a)
- c) 3 only d) 1,2 and 3

123. A barometer can be used for

1) Measuring atmospheric pressure

- 2) Determine altitudes
- 3) Measuring density of fluids
- 4) Weather forecasting

Choose the correct answer :

a)	1,2 and 3	b) 2,3 and 4
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c) 1,3 and 4 d) 1,2 and 4

124. Other than spreading malaria, Anopheles mosquitoes are also vectors of

- a) Cholera b) Filariasis
- c) Encephalitis d) Yellow fever

125. The first effective vaccine against polio was prepared by

a) John Heynsham Gibbon

b) James Simpson

- c) Jonan E. Salk
- d) Robert Edwards

126. The Science of heredity was called

'Genetics' by

a) Gregor Mendel	b) C. Correns	

c) H.J.Muller d) W. Bateson

127. Protein responsible for blood clotting is

- a)AlbuminA b)Globulin
- c) Fibroin d) Fibrinogen

128. Table sugar is

b) Sucrose

c) Maltose d) Lactose

129. Matchstick's black material is mainly made up of

a) Yellow phosphorous

b) Black phosphorous

c) Red phosphorous

d) Charcoal

130. Artificial satellites are used for

1) TV transmission

2) Detecting minerals

3) Space research

Which of the above is/are correct :

a) 1 only b) 2 only

c) 3 only d) All three

131. The Sun appears deep orange-red before it sets because

a) It is hotter at the end of the day

b) It contains more helium in the evening

c) It emits only orange-red light

d) Its light has to traverse a thicker atmosphere, therefore, other colours get scattered and do not reach us.

132. We lose consciousness if blood flow to the brain is cut off for more than

- a) 2 seconds
- b) 5 seconds
- c) 5 to 10 seconds
- d) 10 to 20 seconds

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133. Which of the following statements about green plants is true?

> a) Leaves are the respiratory organs of plants

b) Only green plants photosynthesis

c) They respire at night and photosynthesize during the day

d) They respire all the time but the rate of photosynthesis is much higher than the rate ofrespiration

134. The disease caused due to the deficiency of Vitamin D in the diet is

a) Scurvy

c) Rickets

b) Beri-beri

d) Night blindness

135. Petroleum is found in

a) Igneous rocks

b) Sedimentary rocks

c) Metamorphic rocks

d) None of these

136. The marine animal called dugong which is vulnerable to extinction is a/an

> b) Bony fish a) Amphibian

c) Shark

d) Mammal

137. Dr. A.P.J. Abdul Kalam was born on

a) 15th October 1931

b) 26th January 1945

c) 15th August 1947

d) 2nd December 1950

138. Bees must collect nectar from approximately how many flowers to make 1 pound of honeycomb

> a) 10 thousand b)2million

c) 20 million d) 50 million

139. "The Song of India" was written by

a) Mulk Raj Anand

b) Sarojini Naidu

c) William Shakespeare

d) H.G. Wells

140. The author of "Truth, love and a little malice" was not to probe applied a (a

a) Nirad C. Chaudhuri

b) Khushwant Singh

c) Josep Conrad

d) R.L. Stevenson

141. "The Count of Monte Cristo" was written by

a) T.S. Eliot a lenoits / et al and a spledosmad

b) Alexander Dumas

- c) R. K. Narayan
- d) Shobha De do catalon al orw et l

142. The author of the book "If I Am Assassinated" was der Finstende hatt office

a) Indira Gandhi at manual IndoA at (d

b) Z.A. Bhutto

- c) Rajiv Gandhi
- d) Richard Attenborough

143. Haemoglobin is

a) The colouring matter of leaves of plants

b) The colouring of blood

c) The compound present in milk

d) A compound that transmits signals to the brain

144. The poisonous substance that is the main constituent of tobacco is

a) Morphine	b)Aspirin	
c) Caffeine	d) Nicotine	

145. Pencil 'lead' is made up of

a) Graphite	b) Charcoal
-------------	-------------

c)	Lead	Oxide	d) I	Lamp	black
----	------	-------	------	------	-------

146. Aluminum in the earth's crust is found as

a) Cryolite	b) Bauxite	
c) Gypsum	d) Silimanite	

11

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33. Which of the following statements about

c) They respire at night and

135. Petroleum is found in

137. Dr. A.P.T

pound of honeycouph

III

a) Leaves are the respiratory organic of

photosynthesis is mildishigher than the fatte

Abdul Kalam was

#### 147. 'Chlorination' is

a) A process of converting chlorides into chlorine

2) Drowns and kill the moselleW D.H (b

b) Adding small amounts of chlorine to contaminated water

c) A chemical reaction in which chlorine is formed

d) The formation of salt containing chlorine

148. What is the number of spokes in the Dharmachakra in the National flag of India?

- a) 30 b) 24
- c) 36 d) 44

149. Who is India's 20<sup>th</sup> Chief Election Commissioner?

a) Mr. Hari Shankar Brahma

b) Mr. Achal Kumar Jyoti

c) Mr. Gopinath Pillai

d) Dr. Nazim Zaidi

150. The biggest asteroid known is:

- a) Vesta b) Icarus
- c) Ceres d) Eros

b) The colouring of blood

c) The compound present in m



### PART -C: ARITHMETIC & AP

rks :	100
	bib

151. The value of  $\frac{2}{3}$  of  $\frac{3}{4}$  of 60 is

b) 40 a) 30 c) 50 d) 60

152. The value of the expression

40 x (-23) + 40 x (-17) is 004 (o

d) 1560 c) -1600

153.  $\frac{1}{4}$  litre of milk costs Rs. 20. How much

would 6 litres of milk cost ?

a) Rs.400 b) Rs.520 c) Rs.480 d) Rs.600

154. A cable  $27\frac{1}{2}$  m long is cut into equal

pieces measuring  $2\frac{3}{4}$  m each. How many pieces has the cable been cut into?

a) 11

c) 9 d) 10 155. The LCM of the numbers 30, 48, 120 is b) 240 a) 200 c) 280 d) 320

b) 12

156. A truck driver earns  $3\frac{2}{7}$  times of what his helper earns. If the helper earns Rs.3640, how much does the driver earn?

a) Rs.10220 b) Rs.9640 c) Rs.14320 d) Rs.11960 178.162 157. How many seconds are there in - of 2 hours?

is 6 m more the	length of a rectangle	163. The
a) 4600	b) 4720	
c) 4800	d) 5000	

158. I am a number between 20 and 30. If you divide 47 and 92 by me, the remainders are 3 and 4 respectively. What number am I?

a) 20	b) 22
c) 25	d) 30

159. John has put price tags on the items in his shop in the form of a code. The code is as follows:

> M:Rs.1 N:Rs.2

O:Rs.481.29(b) Rs50071.29 (c

P:Rs.8 32 027 emilado elgoeg 08....... Q:Rs.16

R: Rs. 32

a)  $\frac{3}{8}l$ 

13

c)  $\frac{7}{2}l$ 

A Price tag 'RNP' means 32 + 2 + 8 = Rs.42. The price tag 'SMR' would be

b) Rs.87 a) Rs. 85

d) Rs. 100 c) Rs. 97 160. Meera mixes  $\frac{1}{2}$  *l* of water with  $\frac{1}{8}$  *l* of orange squash. How much mixture does she get?

b) 1 l

 $\frac{7}{8} l = 1$  d)  $\frac{5}{8} l$ 

sum of their ages is 30, what is Jaya's ag

161. By how much is the sum of 14.28 and 11.219 greater than their difference?

	a) 22.438	b) 25.172
93.4	c) 26.31	d) 18.126
162.	The value of 63.3	68 + 21.732 - 35.1 is
	a) 47.5	b) 50 0005.28 (o
o br	c) 67.24	d) 54.51

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# Adda|24|7



### PART -C: ARITHMETIC & APTITUDE

	on carry 1 mark.	Marks : 100
151. The value	$e \operatorname{of} \frac{2}{3} \operatorname{of} \frac{3}{4} \operatorname{of} 60 \operatorname{is}$	sis (ble s c) Rs. (c)
a) 30	b) 40	172. A train
c) 50	d) 60	Contentine?

152. The value of the expression of 008 (a

40 x (-23) + 40 x (-17) is 000 (-

a) 1600	b) 1800	
c) -1600	d) 1560	wo place What will

153.  $\frac{1}{4}$  litre of milk costs Rs. 20. How much

would  $6\frac{1}{2}$  litres of milk cost?

a) Rs.400 b) Rs.520 c) Rs.480 d) Rs.600

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and o rough in to the	or grand and the state	A SPECIAL CONTRACTOR
a) 4600	b) 4720	its breadt
c) 4800	d) 5000	oom. fun

158. I am a number between 20 and 30. If you divide 47 and 92 by me, the remainders are 3 and 4 respectively. What number am I?

a) 20	05;710	b) 22	
c) 25	erofse	d) 30	

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M:Rs.1 N:Rs.2 O:Rs.481.29(b) Rs.50071.29(o P:Rs.8 32 027 entre 106 elgoeg 08...... Q: Rs.16

R: Rs. 32

a)  $\frac{3}{8}l$ 

13

c)  $\frac{7}{2}l$ 

S:Rs.64 0001 (d. p. p. p. 0621 (s

A Price tag 'RNP' means 32 + 2 + 8 = Rs.42. The price tag 'SMR' would be

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d) Rs. 100 c) Rs. 97 160. Meera mixes  $\frac{1}{2}$  *l* of water with  $\frac{1}{8}$  *l* of orange squash. How much mixture does she get?

b) 1 l

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sum of their ages is 30, what is Jaya's a

161. By how much is the sum of 14.28 and 11.219 greater than their difference?

a) 22.438	b) 25.172
c) 26.31	d) 18.126
162. The value of (	53.368 + 21.732 - 35.1 is

a) 47.5 b) 50 d) 54.51 c) 67.24

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163. The length of a rectangle is 6 m more than its breadth. The perimeter of the rectangle is 60 m. Find its length.

Adda 247

a) 12 m	b) 14 m	e me i 87
c) 16 m	d) 18 m	n Nebivi

164. A sum of Rs. 84360 is divided between John and Micky in the ratio 5:7 respectively. How much did John get ?

a) Rs. 21060	b) Rs. 41520
c) Rs. 35510	d) Rs. 35150

165. 12 books cost Rs. 960. What is the cost of 20 books?

a) Rs. 1500	b) Rs. 1600	:1
c) Rs. 1700	d) Rs. 1800	

166. 80 people consume 720 kg of rice in a month. How many kilograms of rice are required in a hostel with 150 people for a month?

a) 1250 kg	b) 1000 kg	" AND
c) 1220 kg	d) 1350 kg	

167. Two members are in the ratio 7:3 and their sum is 110. What is the bigger number?

a) 47	Re 10	b) 77

c) 70 d) 75

168. A sum of Rs.7000 earns an interest of Rs. 840 in a year. What is the percentage rate of interest?

a) 12	b) 1
c) 8	c (b 5

169. Jayant is 6 years older than Jaya. If the sum of their ages is 30, what is Jaya's age?

a) 13 years	b) 14 years	
c) 12 years	d) 15 years	

170. The cost of 40 m of cloth is Rs.2000. Find the cost of 50 m of cloth.

a) Rs.3000	b) Rs.2500	
c) Rs.2000	d) Rs.2250	• (

171. Rajan buys a cycle for Rs.5550 and

makes a profit of 8 % by selling it. How much did he sell it?

a) Rs.5994	b) Rs.6024
c) Rs.6994	d) Rs.6000

172. A train travels 195 km in 3 hours. How many kilometres will it travel in 5 hours 30 minutes?

a) 300 kms b) 357.5 kms

c) 400 kms d) 375.5 kms

173. In a map a distance of 50 km between two places A and B is represented by 4 cm. What will be the actual distance between A and C represented on the map as 7 cm?

a) 67.5 cm	b) 90 km
c) 100 km	d) 87.5 km
174. Convert $\frac{14}{5000}$	$\frac{1}{0}$ into a decimal fraction.

a) .00014	b) .00028
	0,

c) .0014 d) .0028

175. Convert the decimal 0.125 into a fraction in the lowest form.

a) $\frac{1}{8}$	ich. How	b) $\frac{2}{7}$
c) $\frac{1}{9}$	at into ? 12	d) $\frac{1}{15}$

176. The HCF of two numbers is 12 and their product is 4320. What is their LCM?

a) 360	b) 380	
c) 240	d) 280	

177. Find the greatest number which can divide 89,53 and 77 and leave remainder of 5 in each case.

a) 24	b) 6
c) 12	d) 18
178. If a = 2, b =	3, what is a <sup>2</sup> b+ab
a) 20	b) 30

c) Rs.



c) 40 d) 50 179. Which of the following numbers is divisible by 3 ? a) 243 b) 253

a) 245		0) 255	
c) 263	ttoo	d) 283	the time ta
180.How much is	$\frac{13}{15}$	$-\frac{3}{20}?$	4 hours 6 hours
a) $\frac{40}{55}$		b) $\frac{43}{60}$	
c) $\frac{12}{25}$		d) $\frac{13}{20}$	

181. The product of two numbers is 56 and their sum is -15. What are those numbers ?

a) (8, -7)	b) (-8, -7)
c) (14, 4)	d) (7, -8)

182. Which of the following integers is closest to 0 (zero) on the number line.

a) -10	b) 7	
c) 3	d) -2	

183. If 32 workers are paid Rs.4480 as wages (each person is paid the same amount), how much will have to be paid to 45 persons?

a) Rs.5340	b) Rs.5430
c) Rs.5000	d) Rs.6300

184. From -7, -5, -3, 1, 4, 7, find the pairs of integers whose sum is 2.

a) (-7, -5)	b) (-5, -3)
c) (-3, 1)	d) (-5, 7)

185. What will come in place of question mark? in the series :

25, 48, 94,	186, 370, ?
a) 738	b) 744
c) 746	d) 724

186. Of the 144 passengers travelling in a double-decker bus,  $\frac{5}{8}$  are sitting on the lower

deck and the rest are on the upper deck. How many passengers are travelling on the upper deck of the bus?

a) 47	(b) 57
c) 54	d) 64

187. There are 120 seats in the balcony of a theatre? If this is  $\frac{1}{5}$  thof the total seats, what is the total number of seats in the theatre?

a) 500	b) 600
c) 650	d) 700

188. The cost price of an article is Rs.400 and the profit is 20 % of the cost price. What is the selling price of the article?

a) Rs.520	b) Rs.500
c) Rs.402	d) Rs.480

189. Rahul buys a coat marked Rs.4000. He receives a 10 % discount. How much does he pay for the coat ?

a) Rs.3500	b) Rs.3600
c) Rs.3700	d) Rs.3400

190. Fish is sold at the rate of Rs. 240 per kg. If a fish weighs 2.75 kg, what is its price?

a) Rs.700	b) Rs.720
c) Rs.750	d) Rs.660

191. A store charges 6 % VAT on all sales. What is the total cost of a shirt marked Rs.950?

a) Rs.1000	b) Rs.1007	
c) Rs.1100	d) Rs.1107	

192. If 1 US Dollar is equivalent to Rs.62.50, how much US Dollar would one get for Rs.5625?

a) 100	b) 90	
c) 95	d) 125	

193. The simple interest on Rs.16000 for 6 months at 5 % per annum is-

a) Rs.400	b) Rs.450
c) Rs.500	d) Rs.600

194. The total of the ages of Amar, Akbar and

. .

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Anthony is 80 years. What was the total of their ages three years ago?

a) 74 years	b) 72 years

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c) 71 years	d) 77 years
-------------	-------------

195. Two bus tickets from city A to B and three tickets from city A to C cost Rs.77, but three tickets from city A to B and two tickets from city A to C cost Rs.73. What is the fare for city B from A?

a) Rs.17	b) Rs.15	
ND 10	1) D 11	

c) Rs.13 d) Rs.11

196. A school with total enrolment of 1456

organised a fete and only  $\frac{3}{8}$  of the students

participated. Find the total number of students who took part in the fete ?

a) 546	b) 456	
c) 654	d) 514	

197. How many natural numbers between 23 and 137 are divisible by 7?

a) 12	b) 17	
c) 16	d) 13	If a fish weight

198. What smallest number should be added to 5377 so that the sum is completely divisible by 7?

a) 6	Fin	b) 5
c) 4	-10	d) 3

199. What is the remainder when 14 x 27 is divided by 12?

a) 3	b) 4
c) 5	d) 6

200. In a division sum, the divisor is 12 times the quotient and 6 times the remainder. If the remainder is 24, what is the dividend?

a) 1738	b) 1846	
c) 1648	d) 1752	

201. If the number 11a64 is divisible by 11, then a is the number-

a) 1	U.	b) 2	
c) 3		d) 4	

202. A bus starts with a speed of 30 km/hr and increases its speed every 1 hour by 15 km/hr. What is the time taken by it to cover 405 kms?

a) 4 hours	b) 5 hours	
c) 6 hours	d) 7 hours	

203. Two-third of three-fourth of a number is 24. Then one-third of that number is-

a) 14	b) 16	
c) 18	d) 12	

204. Which of the following fractions is the largest?

a)	$\frac{11}{12}$	b) $\frac{13}{20}$
c)	$\frac{37}{40}$	d) $\frac{59}{80}$

205. What is the average of the first 35 natural numbers?

a) 16	b) 18
c) 22	d) 26

206. The least number, which when divided by 16, 20 and 48 leaves in each case a remainder of 11 is

a) 251	b) 336
c) 444	d) 548

207. The average weight of 22 boys is 57 kg. Each boy puts on a dress whose weight is 1 kg. What is the average age of the boys now?

a) 55	b) 52
c) 56	d) 58

208. 180 students appeared for a test, of which 162 passed. What is the failure percentage?

a) 9	b) 10
c) 11	d) 12

209. In an Entrance Test, 5 % of the applicants were found ineligible and 85 % of the eligible candidates belonged to the general category.

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How many candidates applied for the test?

a) 600000	b) 650000
c) 700000	d) 750000

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210. If the cost of b metres of cloth is d rupees, then what is the cost of f metres of cloth at the same rate ?

a)	$\frac{bd}{f}$	b) $\frac{bf}{d}$
c)	$\frac{df}{b}$	d) bdf

211. Three pipes x, y and z take 20 min, 15 min and 12 min respectively to fill a tanker. Find out the time they will take together to fill the tanker.

a) 3 min	b)4min
c) 5 min	d) 6 min

212. 39 persons can construct a road in 12 days, working 5 hours a day. In how many days will 30 persons, working 6 hours a day, complete the work?

a) 10	b) 13
c) 14	d) 15

213. A student is ranked 13<sup>th</sup> from right and 8<sup>th</sup> from left. How many students are there in total?

a) 18	b) 19
c) 20	d) 21

214. Neeta started a business by investing Rs. 50000. After 6 months, Nidhi joined her with a capital of Rs. 80000. After three years they earned a profit of Rs. 24500. What was Neeta's share in the profit.

a) Rs. 10500	b) Rs. 9423
c) Rs. 10250	d) Rs. 12500

215. A father is 30 years older than his son. He will be three times as old as his son after 5 years. What is the father's present age?

a) 35	b) 45
c) 40	d) 30

216. In how many years will a sum of money doubles itself at 10% per annum?

a) 2 years 4 months

b) 10 years

c) 12 years

d) 6 years

217. Ajay, Kiran and Vijay invested Rs. 8000,

Rs. 4000 and Rs. 8000 respectively in a business. Ajay left after 6 months. If after eight months, there was a gain of Rs. 4005, then what will be the share Kiran?

a) Rs.870	b) Rs.880
c) Rs.890	d) Rs.900

218. A group of 1200 persons consisting of captains and soldiers is travelling in a train. For every 15 soldiers there is one captain. What is the number of captains in the group ?

a) 85	b) 80
c) 75	d) 70

219. In a Chess Tournament each of six players will play every other player exactly once. How many matches will be played during the tournament.

a) 12	b) 15
c) 30	d) 36

220. A sum of Rs. 1600 gives a simple interest of Rs.252 in 2 years and 3 months. What is the rate of interest per annum?

a) $5\frac{1}{2}\%$	b) 8 %
c) 6 %	d) 7 %

221. Find the next term of the given series 2,7,17,37,77,157,.....

a) 317	b) 217
c) 197	d) 417

222. If a person saves 20 % of his salary of Rs.4500 permonth, then what will be his annual savings?

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w many candidates applied for the test ?

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114. Neeta started a business by

0000. After 6 months Nidhi oine

Emdidates belonged to the general categor III

Vario	nofm					<ol> <li>In how many</li> </ol>
a) ]	Rs.10	000	ans.	b)	Rs.	12000
c)]	Rs.115	500		d)	Rs.	10800
223. The	eprodu	act of	'a fra	ictio	na	nd the difference
of $3\frac{5}{6}$	and	$2\frac{1}{3}$	is 1	. Fi	nd	the fraction.
a)	$\frac{1}{3}$			b)	$\frac{2}{3}$	
c)	$\frac{3}{5}$	PB9 ths.1 Rs.	ion on	d)	$\frac{3}{8}$	s 4000 and 5 isiness Ajay left onthe, there wa

224. The cost price of 24 articles is the selling price of 15 articles. Find the gain percentage.

a) 45 %	b) 60 %		
c) 25 %	d) 10 %		

225. By selling a watch for Rs.1275, Javed lost 15%. At what price should he sell to make a profit of 10%?

220. A sum of Re. ) 600 gives a simple insteat of Re 262 in 2 vears and 3 months. When is the

rate of interest per aminin?

18

a) Rs.1500	b) Rs.1505
c) Rs.1550	d) Rs.1650

### Adda 24 7



#### Each question carry 1 mark.

226. If < means minus; > means plus; = means 'multiplied by';  $\theta$  means 'divided by'

meaningful sequence and chrose the

Then what would be the value of 27>810 9<6?

- 242. 1) Police 2) Punchment 3) C EE (a
- b) 36
- c) 54
- d) None of these

227. If \$ means +; # means -; @ means x; \* means+; then what is the value of 16\$4@5#72\*4?

- a) 7 and share a share a share of a share of
- b) 29
- c) 36
- d) None of these

228. If Q means 'added to'; J means 'multiplied by'; T means 'substracted from'; K means 'divided by'; then 30K2Q3J6T500?

c) 5,6,4,2

- a) 18
- b) 500
- c) 302
- d) None of these

229. If When means 'X'; You means '÷'; Come means '-'; Will means '+';

What will be the value of 8 When 12 Will 16 You 2 Come 10?

- a) 45
- b) 46
- c) 112
- d) None of these

230. If 20-10 means 200; 6x2 means 4; 8÷4 means 12; 10+5 means 2, Then 100-10x1000

- ÷1000+100÷10?
  - a) 0
  - b) 10
  - c) 100
  - d) None of these and at A according to A. according

231. The digits 0,1,2,3,4,5,6,7,8,9 are substituted by a,b,c,d,e,f,g,h,i,j and 89 is written as ij; Then bee+fg-(ca x h/be) is equal to

- a) bhc
- b) bic
- c) dbe
- d) bja

232. + is substituted by B; - by G; x by E;  $\div$  by C; = by D; > by A; < by F.

Identify the correct expression in each case

- a) 18C3D6B8C4G12
- b) 18A3E6B8G4B12
- c) 18C3G6B8B4D12
- d) 18F3B6E8G4E12

233. If the alternate letters in the given alphabet starting from A are written in small and rest all in capital letters, which of the following will represent the third month after July?

- a) OCTOBER
- b) OCtObEr
- c) oCtObEr
- d) ocToBeR

234. If ' $\alpha$ 'means 'greater than ; ' $\beta$ ' means 'equal to';  $\beta$  'means 'not less than'; ' $\gamma$ ' means 'less than'; ' $\delta$ ' 'not equal to'; ' $\eta$ 'means 'not greater than'

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Which of the four altern inference?	natives could be a correct		
A $\alpha$ 2B and 2B $\theta$ K	means 12010+5 means 2.		
a) Αη Κ			
b) AaK			
c) Aβ K	b) 2 01 (d		
d) AY K	c) 100		
235. A+B means A is t	he son of B		
A-B means A is th	ne wife of B		
AxB means A is t	he brother of B		
A:B means A is the	ne mother of B		
A=B means A is t			
What does PxR÷Q mean?			
a) P is the brother of Q			
b) P is the father of Q			
c) P is the uncle of Q			
d) P is the nephev	vofQ		
	the given al <mark>ternatives</mark> iven wor <mark>ds and hence</mark> roup.		
236. Iron : Copper : Zi	nc 202803EABI (d		
a) Ceramic	b) Carbon		
c) Silver	d) Coke		
237. Ohm : Watt : Volt	233. IF the all chaire let ets		
a) Light	b) Electricity		
c) Horse Power	d) Ampere		
238. Liver : Heart : Kic	iney Maaotoon		
a) Blood	b) Nose		
c) Eyes	d) Lung		
239. Necklace : Ring :	Bangle SoloToolo		
a) Belt	b) Ornament		
c) Bracelet	d) Jewellery		
240. Edge : Corner : Ti	p		
a) Snow	b)Hill		
c) Brink	d) Cap		
	20		

Arrange the following in a logical order and meaningful sequence and choose the appropriate sequence from the given alternatives 241. 1) Honey 2) Flower 3) Bee 4) Wax a) 1342 b) 2143

a) 1,3,4,2	0) 2,1,4,3
c) 2,3,1,4	d) 4,3,2,1

242. 1) Police 2) Punishment 3) Crime 4) Justice 5) Judgement

a) 1,2,3,4,5	b) 3,1,2,4,5
c) 3,1,4,5,2	d) 5,4,3,2,1

243. 1) Elephant 2) Cat 3) Mosquito 4) Tiger

5) W	hale
------	------

a) 1,3,5,4,2	b) 2,5,1,4,3
c) 3,2,4,1,5	d) 5,3,1,2,4

244. 1) Index 2) Contents 3) Title 4) Chapters

a) 2,3,4,5,1	b) 3,2,5,1,4
c) 3,2,5,4,1	d) 5,1,4,2,3

245.1) Probation 2) Interview 3) Selection

4) Appointment 5) Advertisement 6) Application

a)	) 5,6,2,3,4,1	b) 5,6,3,2,4,	1
a)	, 5, 0, 2, 5, 4, 1	0) 5,0,5	,4,4,

c) 5,6,4,2,3,1 d) 6,5,4,3,2,1

Two words are given that have a certain relationship to each other. Select the lettered pair that has the same relationship as the original pair of words.

246. Glossary : Words

- a) Thesaurus : Rhyme
- b) Atlas : Maps
- c) Catalogue : Dates
- d) Lexicon : Words

247. Tree : Branches

- a) River : Tributaries
- b) Continent : Islands
- c) Stream : Delta
- d) Ocean : Seas

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248. Plaintiff : Defendant a) Judge : Jury b) Court : Law c) Attorney : Lawyer d) Injured : Accused 249. Signal : Traffic a) Dam : River b) Lens : Light c) Door : House d) Operation : Doctor 250. Visitor : Welcome a) Beggar : Hungry b) Worship : God c) Criminal : Prosecute d) Warrior : Conquer



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Serial No.

#### ARITHMETIC Full Marks-100 Time-3 Hours

#### Answer any five questions :

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1. a) The speed of boat in still water is 15 km/hr. It can go 30 km upstream and return downstream to the original point in 4 hours 30 minutes. Find the speed of the stream. 7

b) 2 women and 5 men together can finish an emberoidery work in 4 days, while 3 women and 6 men can finish it in 3 days. Find the time taken by 1 woman alone to finish the work, and also that by 1 man alone. 7

c) A rectangular field is  $16 \text{ m} \log \text{ and } 10 \text{ m} \text{ wide}$ . There is a path of uniform width all around it, having an area of  $120 \text{ m}^2$ . Find the width of the path. 6

2. a) The diameter of a circular pond is 17.5 m. It is surrounded by a path of width 3.5 m. Find the area of the path.

b) Metallic spheres of radii 6 cm, 8 cm and 10 cm respectively are melted to form a single solid sphere. Find the radius of the resulting sphere. 7

c) The ages of the students of a class are in AP, whose common difference is 4 months. If the youngest boy is 8 years old and the sum of the ages of all students of the class is 168 years. Find the number of students in the class.7

3. a) A two digit number is such that the product of the digits is 16. When 54 is subtracted from the number, the digits interchange their places. Find the number.

b) Show that any positive odd integer is of the form 6q + 1 or 6q + 3 or 6q + 5, where q is any positive integer. 7

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c) Prove that  $\sqrt{2}$  is an irrational number.

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7

6

4. a) Find the value of k such that the quadratic polynomial  $x^2 - (k+6)x + 2(2k+1)$  has sum of the zeroes as half of their product. 6

b) If the polynomial  $x^4 - 6x^3 + 16x^2 - 25x + 10$  is divided by another polynomial  $x^2 - 2x + k$ , the remainder comes out to be x + a, find k and a. 7

c) The coach of a cricket team buys 3 bats and 6 balls for Rs.3900/-. Later she buys another bat and 2 balls of the same kind for Rs.1300/-. Represent this situation algebraically and geometrically. 7

5. a) The first term of an AP is 5, the last term is 45 and the sum is 400. Find the number of terms and the common difference.

b) If A(4,-8), B(-9,7) and C(18,13) are the vertices of a triangle ABC, find the length of the median through A and coordinates of centroid of the triangle. 7

c) Find the area of the quadrilateral whose vertices are (1,1), (7,-3),(12,2), (7,21) 7

6. a) A vertical tower stands on a horizontal plane and is surmounted by a flagstaff of height 7 m. From a point on the ground, the angle of elevation of the bottom of the flagstaff is  $30^{\circ}$  and that of the top of the flagstaff  $45^{\circ}$ . Find the height of the tower. 7

c) If  $x = a \cos \theta$  - b  $\sin \theta$ ,  $y = a \sin \theta + b \cos \theta$ , prove that  $x^2 + y^2 = a^2 + b^2$ 

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b) Prove that :

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 $\frac{1}{\sec x - \tan x} - \frac{1}{\cos x} = \frac{1}{\cos x}$ 



7. a) If the simple interest on a certain sum of money for 3 years at 5 % is Rs.150. Find the corresponding Compound Interest.

b) A man buys 5 horses and 7 oxen for Rs.5850. He sells the horses at a profile of 10% and oxen at a profit of Rs.16% and his whole gain is Rs.711. What price does he pay for a horse? 7

c) A man leaves at a point P at 6 a.m. and reashes the point Q at 10 a.m. Another man leaves the point Q at 8 a.m. and reaches the point P at 12 noon. At what time do they meet? 7

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### Essay & Precis Writing Full Marks-100 Time-2 Hours

Section-I : Precis Writing

Write a Precis on the following passage and give a suitable title :

45+5=50 marks

Are values in public life always a matter of conscious choice ? An affirmative response to this question is at least implicit in much that is written on public life and its requirements. There are good reasons for advocating consciously held values to the practice of public life in any modern country. But, this essay, which is a historical discussion of values in Indian public life, focuses on the phenomenon of the historical survival of shared values, beliefs, and desires in what people do rather than what they say. It is important to explain this point.

India now has a recognizable public life made up of all the ingredients that one would consider standard for the construction of public sphere : a representative democracy, the rights of free speech and an active fourth estate. This public life produces, in every discussions, its own interpretive system and categories for measuring its own quality. One such key category, perhaps, one of the most frequently used in discussions of political life, is corruption. Like any other moralizing category, corruption has many meanings and associations, both conscious and unconscious.

There is a strong Gandian semiotic that still circulates in Indian public life and marks the public man- the politician -out from others. The most general uniform for the respectable public servant in India is the safari suit; for the politician, however, it has been, from the time before Independence, white *khadi*, the coarse, homespun cotton that Gandhi popularized in the 1920s. Its symbolism, as intended in the official / nationalist rhetoric, is clear. The white of *khadi* symbolizes the Hindu idea of purity (lack of blemish,

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pollution), its coarseness an identification with both simplicity and poverty; together, they stand for the politician's capacity to renounce his own material well-being, to make sacrifices (*tyag*) in the public/national interest. *Khadi* indicates the person's capacity to serve the community.

Gandhi's own gloss on *khadi*, provided in 1921, mobilized all these meanings and added, in a characteristic nationalist touch, some essential Indianness as well : "I know that many will find it difficult to replace their foreign cloth all at once ...... In order, therefore, to set the example, I propose to discard at least to the 31<sup>st</sup> of October my *topi* (cap) and vest, and to content myself with only a loin cloth and a *chaddar* (shawl) whenever found necessary for the protection of the body..... I consider the renunciation to be also necessary for me as a sign of mourning, and a bare head and a bare body is such a sign in my part of the country".

Gandhi also claimed that this divestment aligned him, symbolically, "with the ill clad masses .......[I]n so far as the loin cloth also spells simplicity let it represent Indian civilization." Emma Tarlo has quite rightly pointed out that it would be a mistake to assume that there was only one meaning to *khadi* and that meaning was available to every Indian in a transparent way. She adduces many pieces of evidence from the writings of Gandhi and his followers to suggest that there was confusion about, as well as criticism of, the significance of *khadi* in Gandhi's own time. *Khadi*, as she argues, worked practically about our nationalist politicians because various kinds and designs of *khadi* could be used, not only to express different understandings of its meanings, but to make social distinctions visible as well.

Today, the picture is different. The attainment of independence and the marginalization of any practice of Gandhian politics have made *khadi* less a matter of conscious discussion. While *khadi* persists, its meanings have lost the richness of times of struggle against British rule. It now represents either thoughtless habit or-if the decision to wear *khadi* is clearly conscious - callous hypocrisy. The image of a political leader from a 1994 issue of magazine *Sunday* captures the close association that people now see between the donning of *khadi* and illegal acquisition of wealth. It documents something about the routine cynicism with which we now read *khadi* that

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adorns the body of the political man. Thus, *khadi*, once described by Nehru as, "the livery of freedom" and by Susan Bean as the "fabric of Indian independence", now stands unambiguously for the reverse of its nationalist definition. The *khadi* - clad politician is usually seen today as "corrupt", *khadi* itself as a dead giveway, as the uniform of the rouge, as something like the hypocritical gesture of one who protests too much.

Section-II : Essay Writing

50 marks

- 2. Write an essay on ANY ONE of the following topics :
- a) Deforestation and ecological crisis in the North East of India.
- b) Rural industries and village economy in Meghalaya.
- c) Role of political parties and democracy in contemporary India
- d) Mass media and social empowerment.

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