



# BPSC PRELIMS

CIVIL SERVICE EXAM

2004

- 1 "When he attained Kingship, he was quite independent of rules and orders of Shariat". For which Sultan Baruni made this statement?  
(a) Iltutmish (b) Balban  
(c) Alauddin Khilji (d) Md. Tughalaq
- 2 In the Mughal administration "Madad-i-Mash" indicates?  
(a) Toll tax  
(b) Revenue free land given to learned persons  
(c) Pension to army person  
(d) Cultivation tax
- 3 Who did illustrate "Dastan-I-Amir Hamza"?  
(a) Abdul Samad (b) Mansur  
(c) Mir Sayyid Ali (d) Abul Hasan
- 4 In the sultanate time, the highest rural authority for land revenue was:  
(a) Chaudhary (b) Rawat  
(c) Malik (d) Ratwari
- 5 Where was the seat of the first Republic of the world in sixth century B.C.?  
(a) Taxila (b) Vikramshila  
(c) Sparta (d) Magadh
- 6 Chinese traveller Hiuen Tsang studied at which of the following university?  
(a) Taxila (b) Vikramshila  
(c) Magadh (d) Nalanda
- 7 Chandragupta Maurya is a prominent figure in the book of:  
(a) Bhasa (b) Sudraka  
(c) Vishakhadatta (d) Ashwaghosa
- 8 The description of the administration of Patliputra is available in:  
(a) Divyavadan (b) Arthashastra  
(c) Indica (d) Ashoka's inscriptions
- 9 Where was the third Buddhist council held?  
(a) Vatsa (b) Patliputra  
(c) Kaushambhi (d) Kashmir
- 10 By which ruler Patliputra was chosen for the first time as a capital?  
(a) Ajatashatru (b) Kalashoka  
(c) Udayin (d) Kanishka
- 11 Language used in the inscriptions of Ashoka is:  
(a) Sanskrit (b) Prakrit  
(c) Pali (d) Hindi
- 12 Who amongst the following Mauryan rulers conquered the Deccan?  
(a) Ashoka (b) Chandragupta  
(c) Bindusara (d) Kunala
- 13 In how many categories did Megasthenes divide the Indian Society?  
(a) Four (b) Five (c) Six (d) Seven
- 14 The list of sixteen Mahajanapadas is available in:  
(a) Mahabhartta (b) Anguttara Nikaya  
(c) Chhandogya Upanishad (d) Samyukta Nikaya
- 15 'Sita Land' in Arthashastra stands for:  
(a) Uncultivated waste land  
(b) Land owned by the Brahmanas  
(c) Land cultivated by tribes  
(d) Forest land
- 16 An advanced water management system of Harappan times has been unearthed at:  
(a) Dholavira (b) Lothal  
(c) Kalibangan (d) Alamgirpur
- 17 At the time of transfer of power, one of the following states possessed a well developed Congress Party Organisation, it was:  
(a) Hyderabad (b) Awadh  
(c) Mysore (d) Junagadh
- 18 The Congress in Travancore launched a Civil dis-obedience Movement against the autocratic Government of the Dewan of Travancore State, the name of the Dewan was:  
(a) C. P. Ramaswami Iyer (b) J. Krishnaswamy  
(c) P. K. Warriar (d) K. Kelappan
- 19 The 1937 session of the Indian National Congress was held in Bihar at:  
(a) Haripura (b) Patna  
(c) Ranchi (d) Bhagalpur
- 20 Which one of the following was not a dominant caste in Bihar during the pre-independence period?  
(a) Bhumihar (b) Rajputs  
(c) Kayasthas (d) Kurmi
- 21 The absence of relative national activity in Bihar before Mahatma Gandhi can be traced to the lack of a:  
(a) United Community (b) Militant group  
(c) Creative regional elite (d) Dominant middle class
- 22 In pre-independent Bihar for the large landlords, political power was a mean to protect their:  
(a) State resources (b) Social status  
(c) Economic power (d) Culture

- 23** During the 1930s, the Civil Disobedience Movement of the Congress was so successful that for a few months all traces of British Raj seemed to have disappeared in:  
 (a) Patna (b) Sahibganj  
 (c) Barhi (d) Muzaffarpur
- 24** The Bihar Provincial Kisan Sabha was formed in:  
 (a) February, 1931 (b) January, 1933  
 (c) March, 1929 (d) April, 1932
- 25** The spread of socialist ideology in Bihar during pre-independence period can be traced to:  
 (a) Western education of Jai Prakash Narain and B. P. Sinha  
 (b) International Socialist Movement  
 (c) Radical Congressman  
 (d) Labour Party in Britain
- 26** Agrarian classes in Bihar during British rule were placed in one of the following categories:  
 (a) Five fold Division (b) Four fold division  
 (c) Three fold division (d) No division
- 27** Bengal was partitioned in 1905 A.D. resulting in protest. It was repartitioned in:  
 (a) 1906 A.D. (b) 1916 A.D.  
 (c) 1911 A.D. (d) 1909 A.D.
- 28** One of the following sought to have the provisions of the wartime Defence of India Act, used against the Gadar Movement in Punjab in 1915, maintained in peace time also:  
 (a) Lord Carmichael (b) Sir. Reginald Craddock  
 (c) Lord Hardinge (d) William Bentinck
- 29** The massacre of the crowd at Jallianwala Bagh in Amritsar took place on:  
 (a) 1<sup>st</sup> June, 1918 (b) 13<sup>th</sup> April, 1919  
 (c) 14<sup>th</sup> April, 1920 (d) 6<sup>th</sup> July, 1921
- 30** The Second Round Table Conference at London was held in the backdrop of the:  
 (a) Emerson-Gandhi Pact (b) Hailey-Gandhi Pact  
 (c) Erwin-Gandhi Pact (d) Gandhi-Simon Pact
- 31** In 1932 by passing one of the following orders, the All Indian Congress Committee was declared unlawful by British government. The order was:  
 (a) Unlawful Association Ordinance  
 (b) Violation of Peace Law  
 (c) Executive Power Ordinance  
 (d) Viceroy's Special order
- 32** Mahatma Gandhi's close English companion during the freedom movement was:  
 (a) Reverend Thomas Moore (b) A. O. Hume  
 (c) Reverend Charlie Andrews (d) William Wavell
- 33** The first Indian to hold office as Governor-General of independent India was:  
 (a) Jannalal Bajaj (b) C. Rajagopalachari  
 (c) Dr. Rajendra Prasad (d) M. A. Ansari
- 34** At the Congress Working Committee meeting at Allahabad (April-May, 1947) who of the following member was able to secure a majority for his plan of a guerilla war against the Japanese due to India's unequivocal stand against Nazism, fascism and imperialism?  
 (a) Subhash Chandra Bose (b) Sarojini Naidu  
 (c) Maulana Azad (d) None of these
- 35** Mahatma Gandhi held that participation in the Second World War meant a violation of the principle of:  
 (a) Justice (b) Equity  
 (c) Socialism (d) Non-Violence
- 36** The Chairman of the Joint Parliamentary Committee of the 1935 Bill that led to the formation of the Government of India Act of 1935 was:  
 (a) Lord Linlithgow (b) James Macdonald  
 (c) Winston Churchill (d) Clement Attlee
- 37** Who among the following Presidents held office for two consecutive terms?  
 (a) Dr. Rajendra Prasad (b) Dr. S. Radhakrishnan  
 (c) Dr. Zakir Hussain (d) Both (a) and (b)
- 38** The Poona Pact aimed:  
 (a) At Hindu-Muslim unity (b) To represent lower caste  
 (c) At privileges to princes (d) To review dyarchy
- 39** The object of Butler Committee of 1927 was to:  
 (a) Modernise the Indian Army  
 (b) Modernise the Indian Agriculture  
 (c) Impose censorship on National Press  
 (d) Improve the relationship between Government of India & Indian states
- 40** The cause of the decline of textile industries in 18<sup>th</sup> century in Bengal was:  
 (a) Decline in the quality of production  
 (b) Non-availability of raw material  
 (c) High tariff rates on exports to Britain  
 (d) Non-availability of craftsmen
- 41** Who was the Congress President at the time of transfer of power in 1947 to India by the British?  
 (a) Jawaharlal Nehru (b) Rajendra Prasad  
 (c) Abul Kalam Azad (d) J. B. Kriplani
- 42** The Muslim delegation met Minto in 1906 at Simla and pleaded for:  
 (a) Separate electorate for Muslims  
 (b) A composite electorate  
 (c) Higher representation to the Hindus  
 (d) Special representation to the Muslim by nomination
- 43** The system of competitive examination for civil services was accepted in principle in year:  
 (a) 1833 (b) 1853 (c) 1858 (d) 1882
- 44** Who is known as 'Lok-Nayak'?  
 (a) Mahatma Gandhi (b) Subhash Chandra Bose  
 (c) Jai Prakash Narayan (d) Bal Gangadhar Tilak
- 45** Who has written "Jhanda Geet"?  
 (a) Rabindranath Tagore  
 (b) Bankim Chandra Chatterjee  
 (c) Maithilisharan Gupta  
 (d) Shyam Lal Prashad Gupta
- 46** Who said 'Swaraj is my birthright and I will have it'?  
 (a) Mahatma Gandhi (b) Bipin Chandra Pal  
 (c) Gopal Krishan Gokhale (d) Bal Gangadhar Tilak
- 47** Which incident led Gandhiji to withdraw Non-Cooperation Movement?  
 (a) Kakori episode  
 (b) Chauri-Chaura episode  
 (c) Jallianwala Bagh episode  
 (d) Muzaffarpur episode

- 48** Which principle was propounded by Nehruji for establishing World Peace and Mutual Cooperation?  
 (a) Non-Alignment (b) Panchsheel  
 (c) Peaceful Co-existence (d) None of these
- 49** Who used the words 'Sarvodayas' for the first time?  
 (a) Mahatma Gandhi (b) Pt. Nehru  
 (c) Vinoba Bhave (d) Jai Prakash Narayan
- 50** When did India conduct its first nuclear test?  
 (a) 15<sup>th</sup> May, 1964 (b) 18<sup>th</sup> May, 1974  
 (c) 11<sup>th</sup> May, 1989 (d) 13<sup>th</sup> May, 1998
- 51** Whose pre-consent is essential for a money Bill?  
 (a) The Prime Minister (b) The Finance Minister  
 (c) The President of India (d) None of them
- 52** In which House the Chairperson is not the member of that House?  
 (a) Lok Sabha (b) Rajya Sabha  
 (c) Legislative Assembly (d) Legislative Council
- 53** With which is the 73<sup>rd</sup> Amendment of the Constitution related?  
 (a) Municipal Corporation  
 (b) House Rent Act  
 (c) Panchayati Raj Act  
 (d) Increased salary and decrease allowance of MPs
- 54** Who is not entitled to take part in the activities of Lok Sabha?  
 (a) The Comptroller and Auditor General of India  
 (b) The Attorney General of India  
 (c) The Solicitor General  
 (d) The Secretary to President of India
- 55** In which constitutional amendment were the terms 'Social, Secular, and Unity and Integrity of the Nation' incorporated into the Constitution of India?  
 (a) 42<sup>nd</sup> (b) 44<sup>th</sup> (c) 52<sup>nd</sup> (d) None of these
- 56** Which Lok Sabha Election was held in four phases?  
 (a) 11<sup>th</sup> (b) 12<sup>th</sup> (c) 13<sup>th</sup> (d) 14<sup>th</sup>
- 57** In Indian Constitution, Article 370 is related with:  
 (a) Jammu and Kashmir State:  
 (b) Reservation of Scheduled Castes and Scheduled Tribes  
 (c) Punjab and Haryana States  
 (d) Karnataka and Tamil Nadu States
- 58** Who is the Chief Election Commissioner of India at present?  
 (a) N. Gopalaswamy (b) B. B. Tandon  
 (c) T. S. Krishnamurthy (d) T. N. Sheshan
- 59** Dr. Manmohan Singh was the — Prime Minister of India.  
 (a) 7<sup>th</sup> (b) 11<sup>th</sup> (c) 14<sup>th</sup> (d) 16<sup>th</sup>
- 60** Which of the following statements is not true for Dr. Manmohan Singh?  
 (a) Former Finance Minister of India  
 (b) Former Governor of RBI  
 (c) Former Chairman of UGC  
 (d) Former Director of IMF
- 61** Which sequence is true for the following posts in Indian Constitution?  
 (a) Chief Justice of India-Chief Election Commissioner-Chief Ministers of States-Governors of States  
 (b) Governor of States-Chief Justice of India-Chief Minister of States-Chief Election Commissioner  
 (c) Governors of States-Chief Minister of States-Chief Justice of India-Chief Election Commissioner  
 (d) Chief Justice of India-Governor of States-Chief Election Commissioner-Chief Ministers of States
- 62** Recommendation to the President of India on the specific Union-State fiscal relations is made by the:  
 (a) Finance Minister (b) RBI  
 (c) Planning Commission (d) Finance Commission
- 63** Who is the Deputy Chairman of the Planning Commission?  
 (a) Shri K. C. Pant (b) Dr. Montek Singh  
 (c) Dr. Rangarajan (d) Dr. Vimal Jalan
- 64** Who is the Chairman of the Twelfth Finance Commission?  
 (a) Prof. D. T. Lakdawala (b) Dr. C. Rangarajan  
 (c) Shri Digvijay Singh (d) Shri K. C. Pant
- 65** When was Jharkhand separated from Bihar?  
 (a) 15<sup>th</sup> November, 2000 (b) 25<sup>th</sup> August, 1999  
 (c) 2<sup>nd</sup> August, 1998 (d) 5<sup>th</sup> July, 1997
- 66** How many members are there in Bihar Legislative Assembly at present?  
 (a) 240 (b) 243 (c) 245 (d) 250
- 67** How many women Parliamentarians are there in the fourteenth Lok Sabha?  
 (a) 48 (b) 62 (c) 43 (d) 56
- 68** How many women Chief Ministers are there in India at present?  
 (a) 5 (b) 3 (c) 7 (d) 4
- 69** A metal when left exposed to air for some time gets coated with green basic carbonate. The metal is:  
 (a) Copper (b) Silver (c) Nickel (d) Zinc
- 70** The gas used for artificial ripening of fruits is:  
 (a) Ammonia (b) Acetylene  
 (c) Carbon Monoxide (d) Ethylene
- 71** The explosive nitroglycerine is:  
 (a) A salt (b) A Nitro Hydrocarbon  
 (c) A Complex Hydrocarbon (d) An ester
- 72** Evolution proceeds on account of:  
 (a) Fossils  
 (b) Struggle for existence  
 (c) Adaptation through generation  
 (d) Inheritance
- 73** In the process of electroplating a utensil with zinc:  
 (a) The utensil is made the Cathode  
 (b) Pure zinc is made the Anode  
 (c) The utensil is made the Cathode and pure zinc is made the Anode  
 (d) The utensil is made the Anode and pure zinc is made the Cathode
- 74** The noble gas not present in the air is:  
 (a) Helium (b) Neon (c) Argon (d) Radon
- 75** The metal ion present in chlorophyll is:  
 (a) Iron (b) Magnesium  
 (c) Zinc (d) Cobalt

76 Which of the following is not a vestigial organ in man?

- (a) Nictitating membrane
- (b) Auricular muscles of pine
- (c) Incisors
- (d) Vermiform appendix

77 What is Dry Ice?

- (a) Solid Ice
- (b) Solid Carbon Dioxide
- (c) Solid Ammonia
- (d) Solid Sulphur Dioxide

78 Sweetest among all sugars is:

- (a) Fructose
- (b) Glucose
- (c) Sucrose
- (d) Lactose

79 You are standing in a lift. The force on the floor of the lift due to your weight will:

- (a) Become zero when the lift moves up with an acceleration of  $9.8 \text{ ms}^{-2}$
- (b) Become zero when the lift moves down with the acceleration of  $9.8 \text{ ms}^{-2}$
- (c) Become zero when the lift moves with an acceleration of  $9.8 \text{ ms}^{-2}$
- (d) Remain unchanged whatever the rate of acceleration of the lift be

80 Most commonly used safety fuse wire is made of:

- (a) Tin
- (b) Lead
- (c) Nickel
- (d) An alloy of tin and lead

81 A rock is brought from the surface of the moon to earth, then:

- (a) Its mass will change
- (b) Its weight will change but not mass
- (c) Both mass and weight will change
- (d) Neither mass nor weight would change

82 Consider the following statements:

**Assertion (A):** Of the fourteen public sector refineries of India seven are shore-based.

**Reason (R):** Large quantities of crude petroleum are available from on-shore and off-shore oil fields.

- (a) Both (A) and (R) are true and (R) is the correct explanation of (A)
- (b) Both (A) and (R) are true but (R) is not the correct explanation of (A)
- (c) (A) is true, but (R) is false
- (d) (A) is false, but (R) is true

83 Which of the following groups of Indian states indicates of correct descending order of population density as per 2001 census?

- (a) Punjab, Maharashtra, Tamil Nadu, Haryana
- (b) Tamil Nadu, Punjab, Maharashtra, Haryana
- (c) Punjab, Tamil Nadu, Haryana, Maharashtra
- (d) Haryana, Punjab, Maharashtra, Tamil Nadu

84 Which one of the following would you not include in the physical divisions of Bihar?

- (a) Chotanagpur Plateau
- (b) North Ganga Plain
- (c) South Ganga Plain
- (d) East Ganga Plain

85 In Bihar, name the rivers belonging to one of the following groups join the Ganga or its tributaries flowing from the north?

- (a) Ghaghara, Kosi, Punpun

- (b) Kosi, Mahananda, Karmansha
- (c) Gandak, Kamla, Bagmati
- (d) Sone, Kosi, North Koel

86 In Bihar, Bhangar soil occurs in:

- (a) Gaya-Bodh Gaya-East Champaran-Bhagalpur area
- (b) Purnea, Saharsa, Darbhanga, Muzaffarpur area
- (c) Gaya-Nalanda-Bodh Gaya-Sasaram area
- (d) East Champaran-Nalanda-Gaya-Sasaram area

87 Consider the following statements regarding the vivid geographical aspects of Bihar:

1. Of the total irrigated land in Bihar nearly 37% is irrigated by canals.
2. The north Ganga plain in Bihar extends over an area of 33,620 square kilometers.
3. Kisananj and West Champaran get the highest annual rain in Bihar.
4. The total length of National Highways in Bihar is 2,461 kilometers.

Which of these statements are correct?

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

88 Correlate List-I (Minerals) with List-II (Places of Occurrence) in Bihar and select the correct answer using the codes given below the lists:

List-I		List-II	
(A)	Mica	1.	Munger
(B)	Gold	2.	Gaya
(C)	Dolomite	3.	Kishanganj
(D)	Petroleum	4.	Rohtas

Codes:

- |     | A | B | C | D |
|-----|---|---|---|---|
| (a) | 3 | 4 | 1 | 2 |
| (b) | 1 | 2 | 3 | 4 |
| (c) | 2 | 1 | 4 | 3 |
| (d) | 4 | 3 | 2 | 1 |

89 While tinning of utensils, the ammonium chloride powder used for cleaning the hot utensil produces the fumes of:

- (a) Ammonia
- (b) Carbon Monoxide
- (c) Hydrochloric acid
- (d) Ammonia and Hydrochloric acid

90 The American Spaceship 'Columbia' met with tragedy in:

- (a) 2000 AD
- (b) 2001 AD
- (c) 2002 AD
- (d) 2003 AD

91 One volume of zinc (density  $7100 \text{ kg/m}^3$ ) is mixed with two volumes of copper (density  $8900 \text{ kg/m}^3$ ) to make brass. The density of brass is:

- (a)  $8000 \text{ kg/m}^3$
- (b)  $8300 \text{ kg/m}^3$
- (c)  $9500 \text{ kg/m}^3$
- (d)  $9800 \text{ kg/m}^3$

92 Which of the following vitamins is necessary for clotting of blood?

- (a) Vitamin A
- (b) Vitamin C
- (c) Vitamin E
- (d) Vitamin K

**93** The end product of alcoholic fermentation is:

- (a) Pyruvic acid (b) Acetaldehyde  
(c) Ethyl alcohol (d) Formic acid

**94** Out of the following, the hormone is:

- (a) D.N.A. (b) Invertase  
(c) Insulin (d) Ascorbic acid

**95** Hydrofluoric acid is not kept in glass bottles because it reacts with:

- (a) Visible light (b) Sodium oxide of glass  
(c) Aluminum oxide of glass (d) Silicon dioxide of glass

**96** Which one of the following groups of districts in Bihar indicate the correct descending order the population as per 2001 census?

- (a) Patna, East Champaran, Muzaffarpur, Madhubani  
(b) East Champaran, Patna, Madhubani, Muzaffarpur  
(c) Patna, Muzaffarpur, East Champaran, Madhubani  
(d) Muzaffarpur, Patna, Madhubani, East Champaran

**97** Correlate List-I (Industries) with List-II (Cities) in Bihar and select the correct answer using the codes given below the lists:

List-I (Industries)		List-II (Cities)	
(A)	Paper and Pulp	1.	Dalmianagar
(B)	Cigarette	2.	Dilwarpur
(C)	Plywood	3.	Hazipur
(D)	Jute	4.	Purnia

Codes:

- |       |   |   |   |
|-------|---|---|---|
| A     | B | C | D |
| (a) 3 | 4 | 1 | 2 |
| (b) 1 | 2 | 3 | 4 |
| (c) 2 | 1 | 4 | 3 |
| (d) 4 | 3 | 2 | 1 |

**98** Approximately, how many million years ago were the great fold mountains of the world formed?

- (a) 400 (b) 320 (c) 220 (d) 30

**99** 80% of the world's active volcanoes exist in which of the following belts?

1. Atlantic Ocean belt 2. Mid-Continental belt  
3. Circum-Pacific belt 4. Indian Ocean belt

Codes:

- (a) 2 and 3 (b) 1 and 3 (c) 3 and 4 (d) 1 and 2

**100** The world's greatest gold-field area is located in one of the following mountain ranges of South Africa:

- (a) Roggeveld berg (b) Groot Swart berg  
(c) Witwatersrand (d) Drakens berg

**101** Some of the world's greatest potential water-power river basins are:

- (a) Congo, Columbia, Yangtze  
(b) Congo, Amazon, Narmada  
(c) Colorado, Narmada, St. Lawrence  
(d) Nile, Amazon, Ob-Irtysh

**102** In which one of the following principal agglomerations do we find as beehive concentration of two-thirds of the world's population?

- (a) North-East USA (b) Central Europe  
(c) South and East Asia (d) North-West Europe

**103** Consider the following statements about the agri-trade of India during 2001-02 and 2002-03:

1. Agro-imports contributed nearly 12% of the total imports of India
2. Edible oils contributed nearly 62% of the value of total agro-imports of India
3. Agro-export contributed nearly 4% of the total exports of India
4. Marine products contributed nearly 23% of the value of total agro-exports of India

Which of these statements are correct?

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

**104** Which is not the economic infrastructure?

- (a) Roads (b) Railways  
(c) Education and Health (d) Power

**105** Which is not a social infrastructure?

- (a) Education (b) Health  
(c) Telecommunication (d) Housing

**106** What is the Tenth Five-Year Plan period?

- (a) Year 2002-2007 (b) Year 2000-2005  
(c) Year 1999-2003 (d) None of these

**107** India is located between:

- (a) Lat. 8°4' S to 37°6' N and Long 68° 7' W to 97°25' E  
(b) Lat. 8°4' N to 37°6' S and Long 68°7' E to 97°25' W  
(c) Lat. 8°4' N to 37°6' N and Long 68°7' E to 97°25' E  
(d) Lat. 8°4' S to 37° 6' N and Long 68°7' W to 97°25' W

**108** The Trans-Himalayan Rivers are:

- (a) Sutlej, Sindhu, Ganga  
(b) Brahmaputra, Sutlej, Sindhu  
(c) Brahmaputra, Sindhu, Ganga  
(d) Sutlej, Brahmaputra, Yamuna

**109** Correlate List-I (Forest Types) with List-II (Regions) in India and select the correct answer using the codes given below the lists:

List-I		List-II	
(A)	Tropical Evergreen forest	1.	Chotanagpur Plateau, Shivaliks
(B)	Monsoon forest	2.	Shillong Plateau, Sahyadris
(C)	Temperate forest	3.	West Bengal, Terai
(D)	Mangrove	4.	Eastern and Western Himalayas, Nilgiri

- |       |   |   |   |
|-------|---|---|---|
| A     | B | C | D |
| (a) 4 | 2 | 3 | 1 |
| (b) 1 | 3 | 2 | 4 |
| (c) 2 | 1 | 4 | 3 |
| (d) 3 | 4 | 2 | 1 |

**110** Consider the following statement about India's fishing resources:

1. India is the sixth largest producer of fish in the world and second in inland fish production.
2. India has 20 lakh square kilometers of Exclusive Economic Zone for deep sea fishing extending 320 kilometers of sea from the coastline.
3. Fisheries contribute about 1% of India's GDP.

4. India's present annual fish production is about 30 million tonnes of which more than 60% is exported.

Which of these statements are correct?

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

111 Copper-gold-iron-coal is with which one of the India connected following sets of places are?

- (a) Khetri-Kolar-Kudremukh- Jharia  
(b) Kolar-Khetri-Kudremukh-Jharia  
(c) Jharia-Kolar-Kudremukh-Khetri  
(d) Khetri-Kudremukh-Kolar-Jharia

112 What are the 'Core Industries' in India?

- (a) Electricity (b) Coal  
(c) Petroleum Products (d) All of these

113 What is the rank of Bihar with respect to the population in India?

- (a) 2<sup>nd</sup> (b) 4<sup>th</sup> (c) 5<sup>th</sup> (d) 11<sup>th</sup>

114 Which state has no territorial boundary link with foreign country?

- (a) Rajasthan (b) Punjab  
(c) Bihar (d) Haryana

115 Which country has territorial boundary link with Bihar state?

- (a) Bhutan (b) Nepal  
(c) China (d) Bangladesh

116 "Shaktisthal" is related to:

- (a) Smt. Indira Gandhi (b) Rajiv Gandhi  
(c) Mahatma Gandhi (d) Pt. Jawaharlal Nehru

117 What is the rank of Bihar in India in view of Geographical Territories?

- (a) 2<sup>nd</sup> (b) 4<sup>th</sup> (c) 11<sup>th</sup> (d) 9<sup>th</sup>

118 What is the female literacy rate in Bihar as per 2001 census?

- (a) 60.32% (b) 53% (c) 33.57% (d) 47.53%

119 What is the population of Bihar as per 2001 census?

- (a) 85 million (b) 86 million  
(c) 83 million (d) 82 million

120 When did India's population touch 100-crore mark?

- (a) May, 2000 (b) May, 2001  
(c) May, 2002 (d) May, 2003

121 What is the sex-ratio in India as per census 2001?

- (a) Per 1000 males, 927 females  
(b) Per 1000 males, 945 females  
(c) Per 1000 males, 964 females  
(d) Per 1000 males, 985 females

122 For what purpose is, Social Security Scheme for the workers of the unorganized sector launched?

- (a) Old-Age Pension (b) Health Insurance  
(c) Personal Accident Insurance (d) All of these

123 Which is known as the third pillar in International Economic Relation?

- (a) IMF (b) World Bank  
(c) WTO (d) GATT

124 Which is not included in the Millennium Development Goals?

- (a) To eradicate extreme poverty and hunger  
(b) To achieve universal primary education  
(c) To promote gender equality and empower Women  
(d) To achieve double digit growth Rate

125 Which one is not a component to construct, "Human Development Index in India" under UNDP?

- (a) Real GDP per capita in the US Dollar  
(b) Literacy Rate  
(c) Life Expectancy at Birth  
(d) Infant Mortality Rate

126 Which one is not a component of the Pradhan Mantri Gramodaya Yojna?

- (a) Elementary Education (b) Primary Health  
(c) Nutrition Data (d) Rural Road

127 The Charter of India Ocean Rim Associated for Regional Co-operation (IORARC) was signed on:

- (a) April, 1993 (b) April, 1997  
(c) April, 1999 (d) April, 2002

128 The radius of the circle, which touches the line  $x - y = 0$  and is concentric with the circle  $x^2 + y^2 - 6x - 2y - 3 = 0$  is:

- (a)  $\sqrt{2}$  (b)  $1/\sqrt{2}$  (c) 1 (d) 2

129 Let matrices

$$A = \begin{bmatrix} 1 & -1 \\ 2 & 2 \end{bmatrix}, B = \begin{bmatrix} 1 & -a \\ \beta & 1 \end{bmatrix} A$$

$$(A + B)(A - B) = A^2 - B^2 \text{ then :}$$

- (a)  $\alpha = \beta = -1$  (b)  $\alpha = \beta = 0$   
(c)  $\alpha = \beta = 1$  (d)  $\alpha = 1, \beta = -1$

130 If  $\alpha, \beta$  are roots of the equation  $x^2 + 11x + 50 = 0$ ,

then  $\frac{\alpha}{\beta} + \frac{\beta}{\alpha}$  is equals to:

- (a) 0.21 (b) 0.42 (c) 0.84 (d) 1.0

131 If  $f(x) = x + 1$  and  $g(x) = x^2 - 3$ , then  $\left\{ \frac{gf(-1)}{fg(-1)} \right\}$

- (a) 0 (b) 1 (c) 2 (d) 3

132 The number of solutions of the equation:

$$|x|2 - 3|x| + 2 = 0 \text{ is:}$$

- (a) 2 (b) 3 (c) 4 (d) 5

133 The area of a circle is doubled when its radius is increased by 1. The radius of the circle is:

- (a)  $2\sqrt{2}$  (b)  $\sqrt{2}(\sqrt{2} - 1)$  (c)  $\sqrt{2} - 1$  (d)  $\sqrt{2} + 1$

134 Series  $\sum \frac{L^n \cdot 12^n}{n^n}$ , is:

- (a) Convergent (b) Divergent  
(c) Convergent and divergent (d) None of these

135 If  $f(x) = \frac{x-5}{x+5}$ ,  $x \neq -5$ , then the domain of  $f^{-1}(x)$  is:

- (a) R (b)  $R - (1)$  (c)  $(-\infty, 1)$  (d)  $(1, \infty)$

136  $\lim_{x \rightarrow 0^+} \frac{1}{1 - e^{-\frac{1}{x}}}$  is:

- (a) 1 (b) 0 (c)  $-\mu$  (d) 2

137 If  $x = a \cos \theta + b \sin \theta$  and  $y = a \sin \theta - b \cos \theta$ , then  $x^2 + y^2$  is equal to:

- (a)  $a^2 - b^2$  (b)  $b^2 - a^2$  (c)  $a^2 + b^2$  (d)  $a^2 + 2ab^2$

138 The only unelected President in the history of the USA was:

- (a) Munro (1817-25) (b) Nixon (1969-74)  
(c) Ford (1974-77) (d) Carter (1977-81)

- 139** Where is the permanent seat of International Court of Justice?  
 (a) The Hague (b) Geneva  
 (c) Moscow (d) Washington
- 140** How many members does UNO have at present?  
 (a) 189 (b) 191 (c) 185 (d) 193
- 141** On September 11, 2001 which building in the USA was hit by terrorist attack?  
 (a) White House (b) Capital Hill  
 (c) Pentagon (d) State Department
- 142** The Charter of UNO was signed in:  
 (a) Geneva Conference  
 (b) San Francisco Conference  
 (c) Dumbarton Oaks Conference  
 (d) Yalta Conference
- 143** At present how many members does NATO have?  
 (a) 26 (b) 15 (c) 18 (d) 12
- 144** When was the Soviet Union disintegrated?  
 (a) December, 1989 (b) December, 1990  
 (c) December, 1991 (d) January, 1994
- 145** The American Spaceship Columbia met with tragedy in  
 (a) 2000 A.D. (b) 2001 A.D.  
 (c) 2002 A.D. (d) 2003 A.D.
- 146** What are the 'Core Industries' in India?  
 (a) Electricity (b) Coal  
 (c) Petroleum (d) All of these
- 147** How many members were nominated from Anglo-Indian Society in Bihar Vidhan Sabha?  
 (a) 3 (b) 1 (c) 2 (d) 5
- 148** Who is the Governor of Bihar at present?  
 (a) Shri Nawal Kishore Sharma  
 (b) Justice M. Rama Jois  
 (c) Shri Madan Lal Khurana  
 (d) Justice Anshuman Singh
- 149** What is the sex ratio in India as per census 2001?  
 (a) Per 1000 males 927 females  
 (b) Per 1000 males 945 females  
 (c) Per 1000 males 964 females  
 (d) Per 1000 males 985 females
- 150** When was Indian Parliament attacked by terrorists?  
 (a) 24<sup>th</sup> December, 1999 (b) 13<sup>th</sup> December, 2001  
 (c) 14<sup>th</sup> May, 2002 (d) 12<sup>th</sup> January, 2002

### ANSWERS WITH EXPLANATION

- 1** Option (c) is correct.  
**Explanation:** "When Allauddin Khalji attained kingship, he was quite independent from the rules and orders of the Shariat."  
 ■ Amir Khusro has written in detail about Alauddin Khalji's administration.  
 ■ Khalji believed that the king had no family and all the people of the country should be his subjects.
- 2** Option (b) is correct.  
**Explanation:** 'Madad-e-mash' in the Mughal period meant such land, which was given to religious people, scholars and respectable citizens, or to those who had no other means of livelihood.
- 3** Option (a) is correct.  
**Explanation:** Abdul Samad is related to Dastan-Bir i-Amir Hamza.  
 ■ Abdul Samad, a Mughal-era painter from India who painted "Dastan-Bir i-Amir Hamza" in the 16<sup>th</sup> century.  
 ■ 'Dastan-i-Amir Hamza' or 'Hamzanama' is the first important work of Mughal painting, which has more than 1200 pictures.  
 ■ Some other Dastan-i-Amir Hamza includes Aqa Mirak, Muhammad Riza, and Hashim.
- 4** Option (a) is correct.  
**Explanation:** During the Sultanate period, the Chaudhary held the most senior position of authority in rural areas with regard to land revenue.  
 ■ The village was the basic unit of administration in the Sultanate period, village headman was known as the "Chaudhary" or "Muqaddam".  
 ■ The Chaudhary was responsible for the administration and governance of the village.
- 5** Option (a) is correct.  
**Explanation:** Taxila was the seat of the first Republic of the world in the sixth century B. C. However, Vaishali, situated in Vaishali district in Bihar, is also believed to be the world's first republic and is currently an archaeological site in India.  
 ■ The University of Takshashila refers to the city of Takṣaśilā (Taxila, modern-day Pakistan) near the bank of the Indus River as a centre of education in religious and secular topics.
- 6** Option (d) is correct.  
**Explanation:** Traveler Hiuen Tsang studied at Nalanda University.  
 ■ The great Chinese traveler Hiuen Tsang visited during the reign of King Harsha.
- 7** Option (c) is correct.  
**Explanation:** Chandragupta Maurya has been prominently described in Vishakhadatta's book "Mudrarakshas".  
 ■ Mudrarakshasa, which tells the story of the Maurya Empire's rise to power.  
 ■ The play, written in Sanskrit, is attributed to Vishakhadatta, which is considered an important literary work of its time.
- 8** Option (c) is correct.  
**Explanation:** The description of the administration of Patliputra, the capital of the Mauryan Empire, is available in the Indica, written by Megasthenes, who lived in India during the 3<sup>rd</sup> century BCE.
- 9** Option (b) is correct.  
**Explanation:** Around 250 BCE, the Third Buddhist Council was convened by Emperor Ashoka in Pataliputra (modern Patna), the capital of the Maurya Empire.  
 ■ The council was presided over by Moggaliputta-Tissa.  
 ■ One of the important results of the council was the compilation of the Abhidhamma Pitaka.
- 10** Option (c) is correct.  
**Explanation:** Udayin is credited with founding the city of Pataliputra.

■ Haryanka dynasty ruler, Ajatashatru's successor Udayin, also known as Udayabhadra, became the king of Magadha in 460 BCE.

■ He shifted the capital of Magadha, from Rajagriha, to Pataliputra, as he believed that Pataliputra, being the centre of the Magadha Empire, was a better place.

**11 Option (b) is correct.**

**Explanation:** Brahmi and Kharosthi scripts were used to write the Prakrit inscriptions during ancient times, and these scripts were readily understandable by the general public.

**12 Option (b) is correct.**

**Explanation:**

■ The credit for the conquest of the Deccan is given to Chandragupta Maurya on the basis of Jain and Tamil sources.

■ Chandragupta Maurya is known for his military conquests, particularly his successful campaigns against the Nanda dynasty, which was the ruling power in northern India at the time.

**13 Option (d) is correct.**

**Explanation:** Megasthenes, a Greek ambassador to India, wrote a book called Indica in which he described the division of Maurya society into seven parts.

■ According to Megasthenes, Indian society was divided into seven major categories: brahmins, farmers, herdsmen, artisans, soldiers, overseers, and government officials (including officers of the army and navy).

**14 Option (b) is correct.**

**Explanation:** The list of sixteen Mahajanapadas is available in the Anguttara Nikaya.

■ The Anguttara Nikaya is a Buddhist scripture that belongs to the Sutta Pitaka, which is one of the "three baskets" of the Pali Tipitaka in Theravada Buddhism.

**15 Option (c) is correct.**

**Explanation:** Sita's cultivation was done with the help of slaves, laborers and prisoners.

■ In Kautilya's Arthashastra, "Sita Bhumi" refers to land that was left fallow or infertile for a fixed period, usually three to four years.

■ It was also known as "Sita's cultivation".

■ The main purpose of leaving the land barren was that fertility and natural balance could be recovered.

**16 Option (a) is correct.**

**Explanation:** Dholavira is known for its unique water management system.

■ The system consisted of a complex network of canals, reservoirs and dams, which were used to manage the city's water supply and prevent floods.

■ Dholavira is an expansive Harappan city, one of the islands in the Rann of Kutch.

■ The site of Dholavira is divided into a fortified citadel, a middle town, and a lower town.

**Note:-** Dholavira has been recognized as a UNESCO World Heritage Site. It is the first site of the ancient Indus Valley Civilisation in India to receive this distinction.

**17 Option (c) is correct.**

**Explanation:** At the time of transfer of power, the Congress party was strong in Mysore.

■ The Congress was gaining strength in Mysore since the 1930s.

**18 Option (a) is correct.**

**Explanation:** The Dewan of the princely state of Travancore, C. P. Ramaswamy Iyer, against whom the Congress launched the Civil Disobedience Movement.

■ He served as the Dewan or Prime Minister of Travancore from 1936 to 1947.

■ The Civil Disobedience Movement was launched by the Indian National Congress in 1938, in response to the Dewan's policies that were seen as oppressive and undemocratic.

**19 No option is correct. (Bonus)**

**Explanation:**

■ The session of the Indian National Congress of the year 1937 was held in Faizpur.

■ This was the first session of the Congress which was held in the village.

■ It was presided over by Jawaharlal Nehru.

**20 Option (d) is correct.**

**Explanation:** Kurmi caste was not dominant in pre-independence Bihar.

■ Bhumihar, Rajput and Kayasth were dominant castes in Bihar during the pre-independence period.

**21 Option (a) is correct.**

**Explanation:** The lack of a strong united community.

■ The lack of a strong united community in Bihar before Mahatma Gandhi's arrival is seen as one of the reasons for the absence of significant national activity in the state.

**22 Option (c) is correct.**

**Explanation:**

■ In pre-independence Bihar, the large landlords used their political power to protect their economic interests in the British India.

■ They had significant influence over the rural economy, often using their power to exploit the farmers and sharecroppers who worked their land.

■ They used to influence government policies through their political powers and protect their own interests.

**23 Option (c) is correct.**

**Explanation:** During the 1930s in Barhi of Munger, all traces of the British Raj seemed to have disappeared.

■ In the 1930s, the Civil disobedience movement of the Congress was so successful that for a few months that all traces of British Raj seemed to have disappeared in Barhi.

**24 Option (c) is correct.**

**Explanation:** Kisan leader Swami Sahajanand Saraswati formed the Bihar Provincial Kisan Sabha in March 1929.

■ Karyanand Sharma, Yadunand Sharma and Rahul Sankrityayan were among its prominent leaders.

**25 Option (a) is correct.**

**Explanation:** The spread of socialist ideology in Bihar during pre-independence periods can be traced to the Western education of Jai Prakash Narayan and B. P. Sinha.



- Jayaprakash Narayan who was influenced by socialist ideas played a significant role in promoting socialist ideology in Bihar.
- The Samajwadi Sangh was formed in the year 1931 with the aim of making the Congress leadership progressive.
- Later, in 1934, the Congress Samajwadi Party was established in Patna under the leadership of socialist leaders Jayaprakash Narayan and Acharya Narendra Dev.

**26** Option (a) is correct.

**Explanation:** During the British rule in Bihar, the agrarian classes were categorized into the following groups: Zamindars, Taluqdars, Ryotwari cultivators, Permanent tenants and temporary tenants.

**27** Option (c) is correct.

**Explanation:**

- Due to opposition and political pressure, the British government decided to annul the partition of Bengal in 1911 AD.
- In the royal court held in Delhi in 1911, it was announced to make Bihar and Orissa separate provinces from Bengal.
- This event is known as the "Repartition of Bengal" or "Undoing the Partition of Bengal".

**28** Option (c) is correct.

**Explanation:**

- During Hardinge (1910-16) brought Defense of India Act in March, 1915 to crush the Gadar movement.
- Under this, 46 Gadar agitators were given death sentence and 64 were given life imprisonment.

**29** Option (b) is correct.

**Explanation:** The Jallianwala Bagh massacre, also known as the Amritsar Massacre, took place on April 13, 1919.

- The incident took place when a large peaceful crowd had gathered at Jallianwala Bagh in Amritsar to protest against the arrest of Indian pro-independence leaders Dr. Saifuddin Kitchlew and Dr. Satya Pal.
- During the incident, Brigadier General Reginald Dyer, used British Indian Army units composed of Gurkha soldiers to control the protesting crowd.

**30** Option (c) is correct.

**Explanation:** The Gandhi-Irwin Pact was signed on March 5, 1931, between Mahatma Gandhi and Lord Irwin

- It is also known as the Delhi Pact.
- Lord Irwin was the British viceroy of India from 1926-31.
- The Gandhi-Irwin Pact was signed just before the second round table conference in London began.

**31** Option (a) is correct.

**Explanation:** Congress was banned under the Unlawful Assembly Committee.

- In January 1932, the British government took drastic steps to suppress the civil disobedience movement. Emergency powers, Unlawful Assembly Committee and ordinances related to nuisance and boycott were taken out.

**32** Option (c) is correct.

**Explanation:** The closest English compatriot of Mahatma Gandhi during the freedom movement was Charles Freer Andrews.

- Andrews was an Anglican priest and educator who first met Gandhi in South Africa in 1914.

- He later became a close friend and advisor to Gandhi and played an important role in promoting Indian independence and social reform.

**33** Option (b) is correct.

**Explanation:** Chakravarti Rajagopalachari was the first and last Indian Governor-General of independent India.

- Rajagopalachari was commonly known as Rajaji.

**34** Option (d) is correct.

**Explanation:** Jawaharlal Nehru was influenced by the ideas of Fabian socialism, which advocates for gradual and peaceful social change through democratic means, and he believed in a mixed economy that combined elements of capitalism and socialism.

**35** Option (d) is correct.

**Explanation:** Gandhi believed that supporting the war would be against his principles of non-violence.

- Mahatma Gandhi and the Congress were against India's involvement in World War II.

- Gandhiji felt that supporting the war would be against his principle of non-violence.

**36** Option (a) is correct.

**Explanation:** The Government of India Act was passed by British Parliament in 1935 and came into force in 1937.

- It is based on a report by Joint Select Committee, led by Lord Linlithgow, set by the two house of British Parliament.
- The Government of India Act of 1935 ended the diarchy system introduced by the GOI Act 1919.

**37** Option (a) is correct.

**Explanation:** The President of India who held office for two consecutive terms is Dr. Rajendra Prasad.

- He was the first President of India and served two terms from 1950-1962.
- No other President of India has held office for two consecutive terms.

**38** Option (b) is correct.

**Explanation:** The aim of the Poona Pact was to provide representation to lower caste.

- The Poona Pact was signed on September 24, 1932.
- The agreement granted new rights to Dalits, resulting in the reservation of electoral seats for the depressed classes in the legislature of British India in 1932.

**39** Option (d) is correct.

**Explanation:** Improve the relationship between the Government of India and the Indian States.

- In 1927, a committee was formed under the leadership of Sir Harcourt Butler.
- Which is commonly known as 'Butler Committee'.
- The task of the committee was to investigate and clarify the relations between the princely states and the paramount power at that time.

**40** Option (c) is correct.

**Explanation:** Under British rule, Indian textiles were subjected to high tariffs and taxes, which caused them to be priced higher than British textiles.

- The decline of the textile industries in 18<sup>th</sup>-century Bengal was caused by several factors.
- One of the main factors was the competition from British textiles, which flooded the Indian market with cheap machine-made fabrics, making it difficult for local artisans to compete.
- Another factor was the economic policies of the British East India Company, which focused on exporting raw materials and importing finished goods.

**41** Option (d) is correct.

**Explanation:** J. B. Kriplani was elected as the president of the Indian National Congress in 1947, after the end of British rule in India.

- After Independence, Kripalani left the Congress and formed his own political party, the Kisan Mazdoor Praja Party.

**42** Option (a) is correct.

**Explanation:** Muslim leaders demanded separate electorate for muslim.

- A delegation of Indian Muslim leaders led by the Aga Khan met Viceroy Lord Minto at Shimla.
- Muslim leaders demanded separate electorate for Muslims in the Provincial and Imperial Legislative Councils and preferred treatment to the Muslim community while nominating members to the Viceroy's Council.
- Lord Minto announced separate electorate for Muslims on the basis of communal representation.

**43** Option (b) is correct.

**Explanation:**

- For the first time in the Charter Act of 1853, the competitive examination system was accepted for civil services.
- In 1854, a committee was formed under the chairmanship of Macaulay, so that this plan could be implemented.

**44** Option (c) is correct.

**Explanation:** Jai Prakash Narayan is popularly known as Lok Nayak, which means hero of the people or leader of the people.

- He was born in Saran district of Bihar, he was one of the leaders of the Indian National Movement.
- He returned to politics in the 1970s, when unemployment, inflation and corruption were rising in the country. During this time only, he was given the title of 'Lok Nayak'.

**45** Option (d) is correct.

**Explanation:** The author of the flag song Vijayi Vishwa Tiranga Pyara is Shyam Lal Prasad Gupta.

- The Indian National Congress recognized the song as the official flag song in 1924.

**46** Option (d) is correct.

**Explanation:** "Swaraj is my birthright, and I shall have it" is the famous declaration attributed to nationalist leader Bal Gangadhar Tilak for India.

- Tilak is known as "Lokmanya", which means "recognized by the people as their leader".

**47** Option (b) is correct.

**Explanation:** Mahatma Gandhi suspended the movement due to the Chauri Chaura incident.

- The Non-Cooperation Movement was launched on 1 August 1920 to protest against British colonial rule in India and demand independence.
- Mahatma Gandhi called off the movement on 5 February 1922 due to the Chauri Chaura incident, where protesters attacked and killed police officers, which went against his principles of non-violence.

**48** Option (b) is correct.

**Explanation:** The Panchsheel doctrine is widely recognized as a key framework for promoting peaceful international relations.

- The Five Principles of Peaceful Coexistence are:

1. Mutual respect for each other's territorial integrity and sovereignty
2. Mutual non-aggression
3. Mutual non-interference in each other's internal affairs
4. Equality and mutual benefit
5. Peaceful coexistence

**49** Option (a) is correct.

**Explanation:** The term Sarvodaya was first used by Mahatma Gandhi.

- The word Sarvodaya was the title of the translation of John Ruskin's book, Unto This Last.
- The term later became incorporated into Gandhi's life, with the concept of Sarvodaya becoming a central part of his political philosophy.
- He understood Sarvodaya as the "welfare of all" and practically applied it to ideas such as dignity of labour, equal distribution of wealth, communal self-reliance and individual liberty.

**50** Option (b) is correct.

**Explanation:** India conducted its first nuclear explosion on May 18, 1974.

- The test was code-named "Smiling Buddha" by the Ministry of External Affairs but also referred to as Pokhran-I.
- The test was carried out at the Pokhran Test Range (PTR) in Rajasthan, India.

**51** Option (c) is correct.

**Explanation:** In India, as per the Constitution, the pre-consent of the President of India is essential for a Money Bill.

- Money Bills in India are a special category of bills related to taxation, borrowing, expenditure, or appropriation from the Consolidated Fund of India.

**52** Option (b) is correct.

**Explanation:** Rajya Sabha is the house whose chairman is not a member of that house.

- Rajya Sabha is the upper house of the Indian Parliament. The Chairman of the Rajya Sabha is known as the Vice President of India, and as per the Indian Constitution, the Vice President is not required to be a member of the Rajya Sabha or any other House of Parliament.

**53** Option (c) is correct.

**Explanation:** The 73<sup>rd</sup> Amendment of the Constitution of India is related to the establishment and functioning of the Panchayati Raj system in India.

■ It was passed by the Indian Parliament in 1992 and added a new Part IX to the Constitution, which contains provisions related to the organization, composition, and powers of Panchayats in India.

**54** Option (d) is correct.

**Explanation:** The Secretary to the President of India does not have the right to participate in the activities of the Lok Sabha.

■ The Comptroller and Auditor General of India, the Attorney General and the Solicitor General of India are empowered by the Constitution to involve in the activities of the Parliament of India.

**55** Option (a) is correct.

**Explanation:** The words "Socialist, Secular, and Integrity" were added to the preamble of the Constitution of India by the 42<sup>nd</sup> Amendment Act of 1976.

**56** Option (d) is correct.

**Explanation:** Elections to the 14<sup>th</sup> Lok Sabha in India were held in 2004. The election was held in four phases across the country, the first phase was held on 20 April 2004 and the last phase on 10 May 2004.

**57** Option (a) is correct.

**Explanation:** Article 370 of the Indian Constitution is related to the state of Jammu and Kashmir.

■ The state of Jammu and Kashmir had special status under Article 370 of the Indian Constitution.

■ It allowed the state to draft its own constitution and restricted the legislative powers of the Parliament with respect to Jammu and Kashmir.

■ The Constitution (Application to Jammu and Kashmir) Order, 2019 has removed the special status of the state and placed it at par with other states in the country.

**58** Option (c) is correct.

**Explanation:** T. S. Krishnamurthy was the Chief Election Commissioner of India in 2004.

**59** Option (c) is correct.

**Explanation:** Manmohan Singh was the 14<sup>th</sup> Prime Minister of India.

■ Manmohan Singh is an Indian economist and politician who served as the Prime Minister of India from 2004 to 2014, becoming the first Indian Prime Minister since Jawaharlal Nehru to be re-elected after completing a full five-year term.

**60** Option (d) is correct.

**Explanation:** Manmohan Singh is not the former director of IMF.

■ Manmohan Singh is an Indian economist and politician who served as the Prime Minister of India from 2004 to 2014.

**61** Option (b) is correct.

**Explanation:** Order of precedence for following posts in the Indian Constitution:

1. President,
2. Vice President,

3. Prime Minister,
4. Governors of States,
5. Former President,
6. Deputy Prime Minister,
7. Chief Justice of India / Speaker of Lok Sabha,
8. Cabinet Minister/Chief Minister of States/Leader of Opposition in Rajya Sabha and Lok Sabha,
9. Civil Service Commission Chairman/Chief Election Commissioner

**62** Option (d) is correct.

**Explanation:** Union-State fiscal relations are made by the Finance Commission of India.

■ The Constitution (Article 280) provides for the creation of a Finance Commission, which is responsible for recommending the distribution of revenue between the Union and the states.

**63** Option (b) is correct.

**Explanation:**

■ The Deputy Chairman of the Planning Commission was Dr. Montek Singh Ahluwalia.

■ The Planning Commission was replaced by the NITI Aayog in 2015.

**64** Option (b) is correct.

**Explanation:** Dr. C. Rangarajan was the chairman of the 12<sup>th</sup> Finance Commission.

**65** Option (a) is correct.

**Explanation:** The state of Jharkhand was established on November 15, 2000, as the 28<sup>th</sup> state of India, through the Bihar Reorganisation Act.

**66** Option (b) is correct.

**Explanation:** The number of members of the Legislative Assembly in Bihar is 243.

■ After the separation of Jharkhand, the number of members of the Legislative Assembly in Bihar is 243.

■ One seat in the Bihar Legislative Assembly was reserved for the Anglo-Indian community.

■ With the constitutional amendment in 2019, this system was abolished and the provision of Anglo-Indian members in the Legislative Assembly was removed. Therefore, now there is no reserved seat for Anglo-Indians in any assembly in India.

■ The number of members of the Legislative Council in Bihar is 75.

**67** Option (c) is correct.

**Explanation:** In the 14<sup>th</sup> Lok Sabha, there were 43 women parliamentarians.

**68** Option (d) is correct.

**Explanation:** At that time, there were women chief ministers in four states of India.

	State	Chief Minister
1.	Rajasthan	Vasundhara Raje Scindia
2.	Bihar	Rabri Devi
3.	Tamil Nadu	Jayalalithaa
4.	Delhi	Sheila Dikshit

**69** Option (a) is correct.

**Explanation:** The metal that gets coated with green basic carbonate when left exposed to air is copper.

- This is because copper reacts with carbon dioxide in the air to form a basic carbonate, which is green in colour.
- During the monsoon season, copper reacts with water, oxygen, and carbon dioxide in the air to form a mixture of hydroxide and carbonate of copper.
- $2\text{Cu} + \text{H}_2\text{O} + \text{CO}_2 \rightarrow \text{Cu}(\text{OH})_2 \cdot \text{CuCO}_3$

**70** Option (d) is correct.

**Explanation:** Ethylene is a gas which is artificially inserted for the ripening of fruits and vegetables.

The chemical formula of Ethylene is  $\text{C}_2\text{H}_4$ .

**71** Option (d) is correct.

**Explanation:** The explosive nitroglycerine is an ester.

- Nitroglycerin, which is also known as nitroglycerine, trinitroglycerin, nitro, glyceryl trinitrate, or 1, 2, 3-trinitroxypropane, is a liquid explosive.
- It is usually produced by nitrating glycerol with white-fuming nitric acid under suitable conditions to create the nitric acid ester.
- It is a dense, colourless, and oily liquid that is highly explosive and sensitive to heat, shock, and friction.
- Nitroglycerin is commonly used as an explosive in various industries, such as mining, construction, and demolition.

**72** Option (c) is correct.

**Explanation:** Evolution proceeds on account of adaptation through generation.

- The concept of biological evolution was given by Charles Darwin in his book 'The Origin of Species' in 1859.
- He said that evolution is influenced by heredity which maintains the adaptation from generation to generation.

**73** Option (c) is correct.

**Explanation:** In this process, the cathode is made of the utensil, while the anode is made of pure zinc.

- The utensil on which zinc coating is done, that (utensil) is made cathode (minus pole) and the one on which it is to be coated, (zinc) is made anode (positive pole).
- When an electric current is passed, zinc is deposited on the cathode as a result of electrolytic action.

**74** Option (d) is correct.

**Explanation:** Radon is a radioactive element that is not naturally present in the atmosphere.

- Radon is a radioactive substance produced due to the decay of Radium-226 found in Uranium ore. Radon has applications in radiotherapy due to its radioactive nature and is used in treating cancers.
- The Noble Gases consist of Helium, Neon, Argon, Krypton, Xenon, and Radon.

**75** Option (b) is correct.

**Explanation:** The metal ion present in Chlorophyll is magnesium (Mg).

- Chlorophyll contains a porphyrin ring structure, which surrounds a magnesium ion at its centre.

■ This magnesium ion is crucial for the chlorophyll molecule's ability to absorb light energy and participate in photosynthesis in plants and other photosynthetic organism.

**76** Option (c) is correct.

**Explanation:** Incisors are not vestigial organs as they are used for chewing food.

- A vestigial organ in humans is an organ or structure that has lost all or most of its original function through the course of evolution.
- Such an organ which appears to be inactive is called a vestigial organ but is still visible in humans, such as the fertilized membrane of the eye, the worm-shaped periscope, the cochlear muscles of the earlobe, etc.

**77** Option (b) is correct.

**Explanation:** Dry ice is the solid form of carbon dioxide ( $\text{CO}_2$ ), a colorless, odorless gas.

- Dry ice is formed when carbon dioxide gas is pressurized and cooled to a temperature below  $-78.5^\circ\text{C}$  ( $-109.3^\circ\text{F}$ ), at which point it turns directly into a solid without going through a liquid phase.
- It is commonly used as a cooling agent and in theatre fog machines for special effects.

**78** Option (a) is correct.

**Explanation:** The sweetest among all sugars is a type of monosaccharide called fructose.

- Fructose is naturally found in many fruits and vegetables, as well as in honey and some root vegetables.

**79** Option (a) is correct.

**Explanation:** The net force acting will be zero.

- When a lift moves downwards with an acceleration of  $9.8\text{ m/s}^2$ , the reaction force acting on the lift will be in the upward direction.
- This means that the tension force (mg) will act downwards, while the reaction force (mg) will act in the opposite direction, cancelling out the net force acting on the lift, resulting in a net force of zero.

**80** Option (d) is correct.

**Explanation:** The most commonly used safety fuse wire is made of an alloy of lead and tin.

- This alloy is known as "lead-tin alloy" or "lead-tin solder".
- It has a low melting point and is therefore able to melt quickly and break the electrical circuit in the event of an overload or short circuit, thus preventing damage to the electrical device or a potential fire hazard.

**81** Option (b) is correct.

**Explanation:** When a rock from the surface of the moon is brought to Earth, its mass remains the same, but its weight changes because the value of g on Earth is greater than on the moon.

- Mass is the amount of matter that an object contains, and it is a scalar quantity that does not change with location.
- Weight is the force with which an object is attracted to the center of the Earth, and it depends on the acceleration due to gravity (g).

**82** Option (a) is correct.

**Explanation:**

- Oil refineries in India are located in various parts of the country, with a concentration in the western and northern regions due to the availability of crude oil from nearby offshore and onshore fields.

- There are currently 22 oil refineries in India, which are operated by various public and private sector companies.

Total number of oil refineries in India: 22

Public sector oil refineries in India: 16

Private sector oil refineries in India: 6

**83** Option (c) is correct.

**Explanation:**

Population density of Punjab, Haryana, Tamil Nadu and Maharashtra

States	2001	2011
Punjab	484	551
Tamil Nadu	480	555
Haryana	478	573
Maharashtra	315	365

**84** Option (d) is correct.

**Explanation:**

Bihar is located in the eastern part of India and is divided into three main physical divisions:

- North Bihar (The Shivalik range and Terai region of the north): This region is situated in the northern part of Bihar and is mainly characterized by the Himalayan foothills and the Gangetic Plain.

- Central Bihar (The vast plain of Bihar): This region is located in the central part of Bihar and is mainly characterized by plateaus and hills.

- South Bihar (The marginal plateau region of the south): This region is situated in the southern part of Bihar and is mainly characterized by hills and plateaus. The region has dense forests and is known for its rich mineral resources.

**85** Option (c) is correct.

**Explanation:** Gandak, Kamla, Bagmati

- In Bihar, the rivers belonging to the North Bihar Rivers group join the Ganga or its tributaries flowing from the north.

- This group includes rivers such as Gandak, Burhi Gandak, Bagmati, Kamla-Balan, Kosi, and Mahananda rivers.

**86** Option (b) is correct.

**Explanation:** The maximum extent of Bhangar soil is found in the districts of Purnia, Saharsa, Darbhanga and Muzaffarpur.

- In Bihar, Bhangar soil occurs in the Northern Plains.

- The Northern Plains of Bihar are primarily formed by the alluvial deposits brought by the Ganga and its tributaries, and Bhangar soil is a type of older alluvial soil that has been deposited by rivers in the past.

**87** Option (b) is correct.

**Explanation:** Of the total irrigated land in Bihar nearly 23% is irrigated by canals. The north Ganga plain in Bihar extends over an area of 33,620 square kilometres.

- Kisanganj and West Champaran get the highest annual rain in Bihar. The total length of National Highways in Bihar is around 3000 kilometres.

**88** Option (c) is correct.

**Explanation:** Gold: Munger

- Mica: Gaya, Nawada and Bhagalpur.

- Gold: Jamui and West Champaran.

- Iron ore: Rohtas, Gaya, and Jamui.

- Bauxite: Jamui and Rohtas.

- Limestone: Bhabhua, Rohtas, and Aurangabad.

- Lead and Zinc: Gaya and Rohtas Petroleum: Kishanganj.

**89** Option (d) is correct.

**Explanation:** Ammonia and Hydrochloric acid

- This happens because ammonium chloride ( $\text{NH}_4\text{Cl}$ ) decomposes when heated, forming ammonia ( $\text{NH}_3$ ) and hydrochloric acid ( $\text{HCl}$ ). The reaction can be represented as:



- The ammonia gas produced can be harmful if inhaled in large quantities. It is important to ensure good ventilation when using ammonium chloride for tinning utensils and to avoid inhaling the fumes directly.

**90** Option (d) is correct.

**Explanation:** On February 1, 2003, the space shuttle Columbia disintegrated during its re-entry into Earth's atmosphere, resulting in the tragic deaths of all seven astronauts who were aboard. The incident occurred under the auspices of NASA.

**91** Option (b) is correct.

**Explanation:**

Volume part weight of zinc =  $7100 \text{ kg/m}^3 = 7100 \text{ kg}$

Volume part weight of copper =  $8900 \text{ kg/m}^3 (8900 \times 2) = 17800 \text{ kg}$

Mixing both =  $(7100 + 17800) \text{ kg} = 24900 \text{ kg}$

Density of brass =  $24900/3 \text{ kg/m}^3 = 8300 \text{ kg/m}^3$

**92** Option (d) is correct.

**Explanation:** Vitamin K is necessary for the clotting of blood.

- It is essential for the production of certain proteins that help with blood clotting and is also important for maintaining healthy bones.

- Vitamin K is found in leafy green vegetables, such as spinach and kale, as well as in some oils and meats.

**93** Option (c) is correct.

**Explanation:** The end product of alcoholic fermentation is ethanol (alcohol) and carbon dioxide.

- During alcoholic fermentation, glucose is converted into ethanol and carbon dioxide by yeast or some types of bacteria, in the absence of oxygen.

- This method is utilized in the manufacturing of various alcoholic drinks, including beer and wine.

**94** Option (c) is correct.

**Explanation:**

- Hormones are chemical messengers produced by the endocrine glands in the body that regulate and coordinate various physiological processes such as growth, development, metabolism, reproduction, and mood.

- Insulin hormone is released from the B-cell of the 'islands of Langerhans of the endocrine gland pancreas.
- It controls the amount of glucose. Due to the lack of its secretion, a disease called diabetes occurs.

95 Option (d) is correct.

**Explanation:** Hydrochloric acid is not kept in glass bottles because it reacts with silicon dioxide in the glass.

- Glass, which contains silica (silicon dioxide), to form silicon tetrafluoride and other products.
- This reaction can weaken the glass container and cause it to break, leading to the release of the highly corrosive and toxic hydrofluoric acid.

96 Option (a) is correct.

**Explanation:** Below is the population of the following districts of Bihar on the basis of 2001 and 2011 census:

	2001	2011
Patna	47,09,851	58,38,465
East Champaran	39,33,636	50,99,371
Muzaffarpur	37,43,836	48,01,062
Madhubani	35,70,651	44,87,379

97 Option (b) is correct.

**Explanation:**

List-I (Industries)	List-II (Cities)
(A) Paper and Pulp	1. Dalmianagar
(B) Cigarette	2. Dilwarpur
(C) Plywood	3. Hazipur
(D) Jute	4. Purina

98 Option (d) is correct.

**Explanation:** The formation of the great fold mountains around the world occurred over a vast span of geological time. The exact timing of their formation varies depending on the specific mountain ranges. The Himalayas, one of the youngest mountain ranges, began forming approximately 40 to 50 million years ago. The Alps in Europe started forming around 30 to 40 million years ago and the Andes in South America began forming around 25 to 30 million years ago. Therefore, as per given option, it is appropriate to say that the great fold mountains of the world were formed approximately 30 millions of years ago.

99 Option (a) is correct.

**Explanation:** Mid-Continental belt and Circum-Pacific belt.

- Most of the world's active volcanoes are located in the "Ring of Fire," which is a region around the Pacific Ocean where several tectonic plates collide, creating a lot of volcanic and seismic activity.
- This region stretches from the west coast of South America, up along the western coast of North America, across the Bering Strait, down through Japan and Southeast Asia, and into New Zealand.
- The middle continental belt has a second place among them. Africa ranks third. The distribution of volcanoes is uneven in the world. Australia is a continent that does not contain any active volcanoes.

100 Option (c) is correct.

**Explanation:** The world's greatest gold fields are located in the Witwatersrand Basin.

- Witwatersrand Basin, which is a geological formation in South Africa. This area is situated in the Gauteng Province of South Africa, near the cities of Johannesburg and Welkom.

101 Option (a) is correct.

**Explanation:** Congo, Columbia, Yangtze

- Some of the world's greatest potential water-power river basins include- Amazon River Basin, Congo River Basin, Yangtze River Basin, Mekong River Basin, Parana River Basin, and Danube River Basin.

102 Option (c) is correct.

**Explanation:** Two-thirds of the world's population is found in East and South Asia.

- The principal agglomeration that has a beehive concentration of two-thirds of the world's population is South and East Asia.
- This region has a total population of approximately one-fifth of the world's population.
- The high population density in south and East Asia is due to a combination of factors, including favourable geographic conditions, economic development, and cultural and social factors.

103 Option (d) is correct.

**Explanation:** Agro-imports contributed nearly 12% of the total imports of India during 2001-02 and 2002-03. Edible oils contributed nearly 62% of the value of total agro-imports of India during 2001-02 and 2002-03. Marine products contributed nearly 23% of the value of total agro-exports of India during 2001-02 and 2002-03.

104 Option (c) is correct.

**Explanation:** Education, health, housing come under social infrastructure.

- Economic infrastructure refers to the physical and organizational structures that are necessary for the operation and development of an economy.

105 Option (c) is correct.

**Explanation:** Telecommunication is economic infrastructure.

- Social infrastructure refers to the physical and organizational structures that support and enable social activities and services in a community or society.
- This can include a range of institutions and facilities such as education, health, housing, community centres, libraries, parks, and public transportation systems.

106 Option (a) is correct.

**Explanation:** The period of the Tenth Five Year Plan was from 2002 to 2007.

107 Option (c) is correct.

**Explanation:** India is located between 8°4' N and 37°6' N latitudes and from 68°7' E and 97°25' E longitudes. Its latitudinal extent is about 3214 km, and its east-west extent is approximately 2933 km. The country lies entirely in the northern hemisphere. The Tropic of Cancer (23°30' North) passes through the center of the country, dividing it into North India and South India.

**108** Option (b) is correct.

**Explanation:** Brahmaputra, Sutlej, Sindhu

- The Trans-Himalayan Rivers are the rivers that originate from the Tibetan Plateau and flow through the Himalayas into the Indian subcontinent.
- The three main Trans-Himalayan Rivers are: Indus River, Sutlej River and Brahmaputra River.

**109** Option (c) is correct.

**Explanation:**

- The tropical evergreen forest is found in those areas, where rainfall between 130 and 250 cm and temperature ranges from 22°-27°.
- It is mainly found in North Eastern India (Shillong Plateau), Western Ghats (Sahyadri), Andaman and Nicobar.
- The main area of monsoon vegetation is Chhotanagpur Plateau, Shiwaliks, Jharkhand, Bihar, West Bengal; Extends up to Uttar Pradesh, Madhya Pradesh etc.
- Temperate vegetation is found in Nilgiri, Anaimalai and Palani hills.
- Delta or tidal forests are mainly found in the coastal and low deltaic areas.
- Its distribution is mainly found in Ganga-Brahmaputra Delta, Mahanadi Delta, Andaman and Nicobar Islands etc.

**110** Option (d) is correct.

**Explanation:** The answer will be (d) according to the data at the time of asking the question.

- India has an Exclusive Economic Zone (EEZ) of 2.02 million sq km, which provides abundant opportunities for fisheries.
- India is the second largest producer of fish in the world.
- Marine fish accounts for about 65% of the total fish production, while the rest comes from inland fisheries.
- The fishing industry in India provides employment to around 14 million people, both directly and indirectly.

**111** Option (a) is correct.

**Explanation:** Khetri-Kolar-Kudremukh-Jharia

Copper mine	Khetri (Rajasthan)
Gold	Kolar and Hatti (Karnataka)
Iron ore	Kudremukh (Karnataka)
Coal mine	Jharia (Jharkhand)

**112** Option (d) is correct.

**Explanation:**

- The 'Core Industries' in India is a group of eight industries that are considered essential for the economic development of the country.
- The eight core industries in India consist of Coal, Crude oil, Natural gas, Refinery products, Fertilizers, Steel, Cement, and Electricity.

**113** Option (b) is correct.

**Explanation:** According to census 2001, Bihar was at the fourth place in term of the population in India.

- As of the 2011 Census of India, Bihar is the third-most populous state in India, after Uttar Pradesh and Maharashtra.

**114** Option (d) is correct.

**Explanation:** Haryana is an entirely landlocked state, and it does not share a border with any foreign country.

- Other landlocked states in India, are: Madhya Pradesh, Chhattisgarh, Jharkhand, Telangana

**115** Option (b) is correct.

**Explanation:** Bihar shares border with neighboring country, Nepal.

- Bihar is a state in the eastern part of India, and it shares its border with the neighbouring country of Nepal.
- The districts of Bihar that share a border with Nepal are West Champaran, East Champaran, Sitamarhi, Madhubani, Supaul, Araria, and Kishanganj.
- The border between Bihar and Nepal is approximately 728 kilometres long.

**116** Option (a) is correct.

**Explanation:** Shaktisthal is related to Mrs. Indira Gandhi.

Person	Burial Place
Indira Gandhi	Shakti Sthal
Mahatma Gandhi	Raj Ghat
Jawaharlal Nehru	Shantivan
Rajiv Gandhi	Veer Bhumi

**117** Option (c) is correct.

**Explanation:** Its ranking according to the exam year was 11.

- Bihar is the 12<sup>th</sup> largest state in India in terms of geographical area.
- It covers an area of approximately 94,163 square kilometres.

**118** Option (c) is correct.

**Explanation:** The correct answer based on the option will be 33.57.

2001	2011
Total Literacy - 47%	Total Literacy - 61.80
Male literacy - 59.68%	Male Literacy - 71.20
Female Literacy - 33.12%	Female literacy - 51.50

**119** Option (c) is correct.

**Explanation:** The population of Bihar was 83 million in 2001.

- According to the 2001 census, the population of India was around 8 crore 30 lacks, i.e., 83 million.
- In which the number of males was 43,243,795 while the number of females was 39,754,71.
- According to the 2011 census, the population of Bihar is 104,099,452, which is 8.60 percent of the total population of India.

**120** Option (a) is correct.

**Explanation:** India's population crossed 100 crore in May 2000.

- India's population is currently estimated to be 1.412 billion as of 2022.
- By the year 2050, the population is projected to increase to 1.668 billion.

**121** No option is correct. (Bonus)

**Explanation:** According to the Census of India, 2001, the sex ratio stands at 933 for the country as a whole. This is a welcome improvement from the 1991 Census, which had recorded 927 females for every 1000 males. Hence no option is right.

**122** Option (d) is correct.

**Explanation:**

- The Social Security Scheme for workers of the unorganized sector was launched to provide social security benefits to the workers in the unorganized sector who do not have access to formal social security benefits.
- It covers various benefits such as an old-age pension, disability pension, survivor pension, health insurance, and personal accident insurance.

**123** Option (c) is correct.

**Explanation:** WTO is considered as the third pillar of the world economy, with a significant role in shaping international economic relations.

- The World Trade Organization (WTO) is an international organization that governs and enforces trade rules on a global scale.
- It is the only international organization that specifically deals with international trade.
- The WTO currently has 164 member countries, including the European Union, as well as 23 observer governments, such as Iran, Iraq, Bhutan, Libya, among others.

**124** Option (d) is correct.

**Explanation:** To achieve Double Digit growth Rate

- The Millennium Development Goals (MDGs) consisted of eight goals that were established by the United Nations in 2000.

**125** Option (d) is correct.

**Explanation:**

■ In the case of India, the HDI is constructed by the United Nations Development Programme (UNDP) using the following components:

1. Life expectancy at birth.
2. Mean years of schooling.
3. Expected years of schooling.
4. Gross national income per capita.

**126** Option (c) is correct.

**Explanation:** Nutrition is not a component of the Pradhan Mantri Gramodaya Yojna.

- The Pradhan Mantri Gramodaya Yojana (PMGY) was a rural development program launched by the Government of India in 2000-2001.

**127** Option (b) is correct.

**Explanation:** The Charter of India Ocean Rim Associated for Regional Co-operation (IORARC) was signed on April, 1997. The Indian Ocean Rim Association (IORA), formerly known as the Indian Ocean Rim Initiative and Indian Ocean Rim Association for Regional Cooperation (IORARC), is an international organisation consisting of 22 coastal states bordering the Indian Ocean.

**128** Option (a) is correct.

**Explanation:** The centre point of the circle  $x^2 + y^2 - 6x - 2y - 3 = 0$  is (3, 1)

The radius of the concentric circle touching the straight line  $x - y = 0$  will be equal to the perpendicular draw from the centre to the tangent line

$$\text{Required Radius} = \frac{3-1}{\sqrt{1^2+1^2}} = \frac{2}{\sqrt{2}} = \sqrt{2}$$

**129** Option (b) is correct.

**Explanation:**

$A = \begin{bmatrix} 1 & -1 \\ 2 & 2 \end{bmatrix}$ ,  $B = \begin{bmatrix} 1 & -\alpha \\ \beta & 1 \end{bmatrix}$  and  $(A+B)(A-B) = A^2 - B^2$   
then  $\alpha + \beta = ?$

$$A + B = \begin{bmatrix} 1 & -1 \\ 2 & 2 \end{bmatrix} + \begin{bmatrix} 1 & -\alpha \\ \beta & 1 \end{bmatrix} = \begin{bmatrix} 2 & -\alpha-1 \\ 2+\beta & 3 \end{bmatrix}$$

$$A - B = \begin{bmatrix} 1 & -1 \\ 2 & 2 \end{bmatrix} - \begin{bmatrix} 1 & -\alpha \\ \beta & 1 \end{bmatrix} = \begin{bmatrix} 0 & \alpha-1 \\ 2-\beta & 1 \end{bmatrix}$$

$$(A + B)(A - B) = \begin{bmatrix} 2 & -\alpha-1 \\ 2+\beta & 3 \end{bmatrix} \begin{bmatrix} 0 & \alpha-1 \\ 2-\beta & 1 \end{bmatrix}$$

$$= \begin{bmatrix} 0 + (-\alpha-1)(2-\beta) & 2(\alpha-1) + (-1-1\beta) \\ 0 + 3(2-\beta) & (2+\beta)(\alpha-1) + 3 \times 1 \end{bmatrix}$$

$$= \begin{bmatrix} -2\alpha + \alpha\beta - 2 + \beta & \alpha - 3\beta \\ 6 - 3\beta & 2\alpha + \alpha\beta - \beta + 1 \end{bmatrix} \tag{i}$$

$$A^2 = \begin{bmatrix} 1 & -1 \\ 2 & 2 \end{bmatrix} \begin{bmatrix} 1 & -1 \\ 2 & 2 \end{bmatrix} = \begin{bmatrix} 1 \times 1 - 1 \times 2 & 1 \times (-1) + (-1) \times 2 \\ 2 \times 1 + 2 \times 2 & 2 \times (-1) + 2 \times 2 \end{bmatrix}$$

$$= \begin{bmatrix} -1 & -3 \\ 6 & 2 \end{bmatrix}$$

$$B^2 = \begin{bmatrix} 1 & -\alpha \\ \beta & 1 \end{bmatrix} \begin{bmatrix} 1 & -\alpha \\ \beta & 1 \end{bmatrix} = \begin{bmatrix} 1 \times 1 - \alpha \times \beta & 1 \times (-\alpha) + (-\alpha) \times 1 \\ \beta \times 1 + 1 \times \beta & \beta \times (-\alpha) + 1 \times 1 \end{bmatrix}$$

$$= \begin{bmatrix} 1 - \alpha\beta & -2\alpha \\ 2\beta & 1 - \alpha\beta \end{bmatrix}$$

$$\therefore A^2 - B^2 = \begin{bmatrix} -1 & -3 \\ 6 & 2 \end{bmatrix} - \begin{bmatrix} 1 - \alpha\beta & -2\alpha \\ 2\beta & 1 - \alpha\beta \end{bmatrix}$$

$$= \begin{bmatrix} \alpha\beta & 2\alpha - 3 \\ 6 - 2\beta & 1 + \alpha\beta \end{bmatrix} \tag{ii}$$

comparing equation (i) and (ii)

$$\alpha - \beta = 2\alpha - \beta \Rightarrow \alpha = 2\alpha$$

$$\Rightarrow \alpha = 2\alpha = 0 \Rightarrow \boxed{\alpha = 0}$$

$$\beta - 3\beta = \beta - 2\beta \Rightarrow -3\beta = -2\beta$$

$$\Rightarrow -3\beta + 2\beta = 0 \Rightarrow -\beta = 0$$

$$\Rightarrow \boxed{\beta = 0}$$

$$\therefore \alpha = \beta = 0$$

**130** Option (b) is correct.

**Explanation:**

$$1x^2 + 11x + 50 = 0$$

$$a = 1, b = 11, c = 50$$

$$\alpha + \beta = \frac{-b}{a} = \frac{-11}{1} = -11$$



$$\alpha\beta = \frac{c}{a} = \frac{50}{1} = 50$$

$$\text{Now } \frac{\alpha}{\beta} + \frac{\beta}{\alpha} = \frac{\alpha^2 + \beta^2}{\alpha \cdot \beta}$$

$$= \frac{(\alpha + \beta)^2 - 2\alpha\beta}{\alpha\beta}$$

$$= \frac{(-11)^2 - 2 \times 50}{50}$$

$$= \frac{121 - 100}{50}$$

$$= \frac{21}{50} = 0.42$$

**131** Option (d) is correct.

**Explanation:**

According to question,

$$f(x) = x + 1$$

$$g(x) = x^2 - 3$$

$$f(-1) = -1 + 1 = 0$$

$$g(-1) = 1 - 3 = -2$$

$$\frac{g\{f(-1)\}}{f\{g(-1)\}} = \frac{0 - 3}{-2 + 1} = 3$$

**132** Option (c) is correct.

**Explanation:**

$$|x|^2 - 3|x| + 2 = 0$$

$$\Rightarrow |x|^2 - |x| - 2|x| + 2 = 0$$

$$\Rightarrow |x|(|x| - 1) - 2(|x| + 1) = 0$$

$$\Rightarrow \{|x| - 2\}\{|x| - 1\} = 0$$

$$\Rightarrow |x| - 2 = 0 \quad (\text{or}) \quad |x| - 1 = 0$$

$$\Rightarrow |x| = 2 \quad (\text{or}) \quad |x| = 1$$

$$\Rightarrow x = \pm 2 \quad (\text{or}) \quad x = \pm 1$$

$$= 2, -2 \quad \quad \quad = 1, -1$$

$\therefore$  4 roots

**133** Option (d) is correct.

**Explanation:**

Let radius of circle =  $r$

$$\text{Area} = \pi r^2$$

If radius increased by  $\perp$ , then Area,  $A' = \pi (r + 1)^2$

$$\text{Ac/q: } \pi(r+1)^2 = 2\pi r^2$$

$$\Rightarrow (r + 1)^2 = 2r^2$$

$$\Rightarrow r^2 + 2r + 1 = 2r^2$$

$$\Rightarrow r^2 - 2r - 1 = 0$$

$$r = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \quad \left\{ \begin{array}{l} b = -2 \\ a = 1 \\ c = -1 \end{array} \right.$$

$$= \frac{+2 \pm \sqrt{(-2)^2 - 4 \cdot 1 \cdot (-1)}}{2 \times 1}$$

$$= \frac{2 \pm \sqrt{4 + 4}}{2} = \frac{2 \pm 2\sqrt{2}}{2}$$

$$= \frac{2}{2} [1 \pm \sqrt{2}] = 1 \pm \sqrt{2}$$

$$= 1 + \sqrt{2} \quad (\text{or } 1 - \sqrt{2} \text{ not possible because radius is not } -ve)$$

$$= 1 + \sqrt{2}$$

**134** Option (a) is correct.

**Explanation:** Series is convergent.

**135** Option (b) is correct.

**Explanation:**

$$\text{Let, } f(x) = y$$

$$\frac{x - 5}{x + 5} = y$$

$$x - 5 = 5y + xy$$

$$x = \frac{5y + 5}{1 - y}$$

$$f^{-1}(x) = \frac{5x + 5}{1 - x} = \frac{5(x + 1)}{1 - x} = x \neq 1 = \mathbb{R} - \{1\}$$

**136** Option (a) is correct.

**Explanation:**

$$\lim_{x \rightarrow 0^+} \frac{1}{1 - e^{-\frac{1}{x}}} = \frac{e^{\frac{1}{x}}}{e^{\frac{1}{x-1}}}$$

$$\text{then, } \frac{1}{1 - 0} = 1 \Rightarrow e^{\frac{1}{x}} \rightarrow 0 \because x \rightarrow 0^+$$

$$\lim_{x \rightarrow 0^+} \frac{1}{1 - e^{-\frac{1}{x}}} = 1$$

**137** Option (c) is correct.

**Explanation:**

$$x = a \cos \theta + b \sin \theta$$

$$y = a \sin \theta - b \cos \theta$$

$$x^2 + y^2 = (a \cos \theta + b \sin \theta)^2 + (a \sin \theta - b \cos \theta)^2$$

$$= (a^2 \cos^2 \theta + 2 \cdot a \cos \theta \cdot b \sin \theta + b^2 \sin^2 \theta)$$

$$+ (a^2 \sin^2 \theta - 2 \cdot a \sin \theta \cdot b \cos \theta + b^2 \cos^2 \theta)$$

$$= a^2 \cos^2 \theta + a^2 \sin^2 \theta + b^2 \sin^2 \theta + b^2 \cos^2 \theta$$

$$= a^2 [\cancel{\cos^2 \theta} + \cancel{\sin^2 \theta}] + b^2 [\cancel{\sin^2 \theta} + \cancel{\cos^2 \theta}] = a^2 + b^2$$

**138** Option (c) is correct.

**Explanation:** The only unelected President in the history of the USA was Gerald Ford.

- He became President on August 9, 1974, after President Richard Nixon resigned from office.

- When Nixon resigned, Ford automatically became President, making him the only person to hold the office of President without being elected as either President or Vice President.

**139** Option (a) is correct.

**Explanation:** The permanent seat of the International Court of Justice is in The Hague, Netherlands.

- It is the principal legal body of the UNO.

- It was built between 1907 and 1913 to serve as a forum for the peaceful settlement of international disputes.

- There are 15 judges who are appointed through separate elections by the General Assembly and the Security Council.

- Their tenure is of 9 years.

**140** Option (b) is correct.

**Explanation:** At the time of asking the question, the number of members of the United Nations was 191.

- The United Nations (UN) is an international organization established in 1945.
- The UN consists of 193 Member States who share its purposes and principles contained in the founding Charter.

**141** Option (c) is correct.

**Explanation:** On September 11, 2001, there was a terrorist attack on the Pentagon (Washington) and the World Trade Center in New York, USA.

- The September 11 attacks, also known as 9/11, were committed by 19 militants associated with the Islamic extremist group al-Qaeda in 2001

**142** Option (b) is correct.

**Explanation:**

- The Charter of the United Nations was signed on June 26, 1945, in San Francisco, California, USA, at the conclusion of the United Nations Conference on International Organization.
- The charter established the United Nations, an international organization designed to promote peace, security, and cooperation among member countries.

**143** Option (a) is correct.

**Explanation:** At the time of asking the question, the number of NATO members was 26.

- NATO was established in 1949 to meet the military challenges facing the USSR.
- Presently it has 30 members.

**144** Option (c) is correct.

**Explanation:**

- The Soviet Union was officially dissolved on December 26, 1991, marking the end of its 69-year existence as a socialist state.
- The dissolution of the Soviet Union was a complex process that involved political, economic, and social changes throughout the country and the surrounding region.

**145** Option (d) is correct.

**Explanation:** The tragedy of the American spaceship Columbia took place in 2003.

- On February 1, 2003, the Space Shuttle Columbia disintegrated upon reentry into the Earth's atmosphere, resulting in the loss of all seven crew members aboard.

**146** Option (d) is correct.

**Explanation:**

- The core industries or core sectors are considered to be the key industries in the Indian economy.
- In India, there are eight core sectors, which include Coal, Crude oil, Natural gas, Refinery products, Fertilizers, Steel, Cement, and Electricity.

**147** Option (b) is correct.

**Explanation:** In 2004, 1 member was elected from the Anglo-Indian community.

- The Constitution (One Hundred and Third Amendment) Act of 2019 removed the provision for reserving seats for the Anglo-Indian community in both the Lok Sabha and state legislative assemblies.
- Therefore, there are no Anglo-Indian members in the current Bihar Vidhan Sabha.

**148** Option (b) is correct.

**Explanation:** At the time of asking the question, M. Ramajois was the Governor of Bihar.

- Rajendra Vishwanath Arlekar has recently been sworn in as the 41<sup>st</sup> Governor of Bihar.

**149** No option is correct (Bonus)

**150** Option (b) is correct.

**Explanation:**

- The terrorists attacked the Indian Parliament on December 13, 2001.
- The attackers belonged to Lashkar-e-Taiba and Jaish-e-Mohammed, two Pakistan-based terrorist organizations.

