

# (December)

1 The radiations used in the treatment of muscle ache are: (d) X-rav (a) Infrared (b) Microwave (c) UV (e) None of the above/More than one of the above **2** The total resistance of a circuit having two parallel resistors is 1.403 kilo-ohm. If one of the resistors is 2.0 kilo-ohm, then the other resistor will be: (a) 1.403 kilo-ohm (b) 2.0 kilo-ohm (c) 3.403 kilo-ohm (d) 4.70 kilo-ohm (e) None of the above/More than one of the above **3** On heating, the resistance of a semiconductor: (b) decreases (a) increases (c) remains same (d) first increases and then decreases (e) None of the above/More than one of the above

## **4** Faraday constant:

- (a) depends on the amount of the electrolyte
- (b) depends on the current passed in the electrolyte
- (c) depends on the volume of the solvent in which the electrolyte is dissolved
- (d) is a universal constant
- (e) None of the above/More than one of the above
- **5** 'Light-year' is a unit of:
  - (a) time (b) speed
  - (c) distance (d) intensity of light
  - (e) None of the above/More than one of the above

6 Which of the following does *not* change when light travels from one medium to another?

- (a) Velocity (b) Wavelength
- (d) Refractive index (c) Frequency

(e) None of the above/More than one of the above

## **7** The velocity of electromagnetic waves is:

(a) $3 \times 10^8 \text{ ms}^{-1}$	(b) $3 \times 10^7 \text{ ms}^{-1}$
(c) $3 \times 10^{6} \text{ ms}^{-1}$	(d) $3 \times 10^5 \text{ ms}^{-1}$

(e) None of the above/More than one of the above

## **8** The first man who placed his foot on the moon is:

- (a) Leonov (b) Neil Armstrong
- (c) Michael Collins (d) James Van Allen
- (e) None of the above/More than one of the above
- **9** The number of neutrons in the nucleus of plutonium nuclide (<sub>94</sub> Pu <sup>242</sup>) are:
  - (a) 94 **(b)** 148 (c) 242 (d) 336 (e) None of the above/More than one of the above
- **10** The highest viscosity among the following is of:
- (a) water (**b**) air (c) blood (d) honey (e) None of the above/More than one of the above

(c) vitamin C (d) carbohydrate (e) None of the above/More than one of the above 12 The breath test conducted by police to check drunken paper? (a) Potassium dichromate—sulfuric acid (b) Potassium permanganate—sulfuric acid (c) Silica gel coated with silver nitrate (d) Turmeric (e) None of the above/More than one of the above **13** Glucose is converted to ethyl alcohol by the enzyme: (a) maltase (b) invertase (d) diastase (c) zymase (e) None of the above/More than one of the above **14** Limewater is turned milky by: (a) CO **(b)** CO<sub>2</sub> (c)  $O_2$ (d)  $O_{3}$ (e) None of the above/More than one of the above **15** The incomplete burning of petrol and diesel produces: (a) nitric oxide (b) nitrogen dioxide (c) carbon dioxide (d) carbon monoxide (e) None of the above/More than one of the above **16** The pH of a solution changes from 3 to 6. The H<sup>+</sup> ion concentration will: (a) increase 3 times (b) decrease 3 times (c) decrease 10 times (d) decrease 1000 times (e) None of the above/More than one of the above 17 A mixture of sand and naphthalene can be separated bv: (a) sublimation (b) distillation (c) chromatography (d) fractional distillation (e) None of the above/More than one of the above **18** The numbers of sigma and pi bonds in benzene are: (a) 3, 3 **(b)** 3, 6 (c) 12, 3 (d) 12, 6 (e) None of the above/More than one of the above **19** The elements present in urea are: (a) C, H, O (b) C, N, O (c) C, H, N (d) C, H, N, O (e) None of the above/More than one of the above **20** The poorest conductor of heat among following is: (a) copper (b) lead (c) mercury (d) zinc (e) None of the above/More than one of the above

**21** The vitamin which is effective in blood clotting is:

- (a) vitamin A (b) vitamin B
- (c) vitamin D (d) vitamin K
- (e) None of the above/More than one of the above

- **11** Milk is a poor source of:
  - (a) calcium (b) protein
- driver has which one of the following on the filter

- the

## **OSWAAL BPSC** Prelims 20 previous years solved papers

OSWAAL BPSC Preliffis 20 previous yea	ars solved papers
<ul> <li>The female sex hormone is:</li> <li>(a) estrogen</li> <li>(b) androgen</li> <li>(c) ingerline</li> <li>(d) currents in</li> </ul>	<ul><li>(c) Bhuvneshwar Kumar (d) Rohit Sharma</li><li>(e) None of the above/More than one of the above</li></ul>
<ul><li>(c) insulin (d) oxytocin</li><li>(e) None of the above/More than one of the above</li></ul>	<b>35</b> Who has been appointed as the Chairperson of the National School of Drama recently?
<ul> <li>The Nobel Prize for developing treatment of Parkinson's disease was given to:</li> <li>(a) Arvid Carlsson</li> <li>(b) John F. Enders</li> </ul>	<ul> <li>(a) Mahesh Bhatt</li> <li>(b) Akshay Kumar</li> <li>(c) Anupam Kher</li> <li>(d) Paresh Rawal</li> <li>(e) None of the above/More than one of the above</li> </ul>
<ul> <li>(c) Robert B. Laughlin</li> <li>(d) Walter Kohn</li> <li>(e) None of the above/More than one of the above</li> </ul>	<ul> <li>Who is the Chairman of the Defence Research and Development Organization?</li> <li>(a) Surjeet Singh Deswal (b) Dr. G. Satheesh Reddy</li> </ul>
<ul> <li>24 The malfunctioning of thyroid gland is due to the deficiency of:</li> <li>(a) vitamin A</li> <li>(b) calcium</li> <li>(c) iodine</li> <li>(d) iron</li> </ul>	<ul> <li>(c) Arvind Saxena</li> <li>(d) Charanjit Singh Attra</li> <li>(e) None of the above/More than one of the above</li> </ul>
<ul> <li>(a) vitalinit A</li> <li>(b) calculat</li> <li>(c) fourier</li> <li>(d) none</li> <li>(e) None of the above/More than one of the above</li> <li>25 The sensitive area of the human tongue to bitterness is:</li> </ul>	For which discipline, Dr. Bushra Ateeq and Dr. Ritesh Agarwal have been selected for Shanti Swarup Bhatnagar Prize, 2020?
<ul> <li>(a) tip</li> <li>(b) middle part</li> <li>(c) posterior part</li> <li>(d) edge</li> <li>(e) None of the above/More than one of the above</li> </ul>	<ul> <li>(a) Chemical Sciences</li> <li>(b) Physical Sciences</li> <li>(c) Medical Sciences</li> <li>(d) Mathematical Sciences</li> <li>(e) None of the above/More than one of the above</li> </ul>
<b>26</b> Ginger is a stem and not a root because:	<b>38</b> Who has been selected for the Nobel Peace Prize, 2020?
<ul> <li>(a) it stores food material</li> <li>(b) it has nodes and internodes</li> <li>(c) it grows horizontally in the soil</li> <li>(d) it lacks chlorophyll</li> </ul>	<ul> <li>(a) European Union</li> <li>(b) World Food Programme</li> <li>(c) Robert B. Wilson</li> <li>(d) Paul R. Milgrom</li> <li>(e) None of the above/More than one of the above</li> </ul>
<ul> <li>(a) None of the above/More than one of the above</li> <li>(27) The sweetest sugar among the following is:</li> </ul>	<b>39</b> Which Indian film actor has been included in the <i>Time Magazine's</i> list of hundred most influential people of 2020?
<ul> <li>(a) fructose</li> <li>(b) glucose</li> <li>(c) maltose</li> <li>(d) sucrose</li> <li>(e) None of the above/More than one of the above</li> </ul>	<ul> <li>(a) Ayushmann Khurrana</li> <li>(b) Shahrukh Khan</li> <li>(c) Ajay Devgan</li> <li>(d) Sunny Deol</li> <li>(e) None of the above/More than one of the above</li> </ul>
<ul> <li>Among the following, which is not a true fruit?</li> <li>(a) Apple (b) Grape (c) Date (d) Plum</li> <li>(e) None of the above/More than one of the above</li> </ul>	<ul> <li>How many Indian beaches have been recommended for the Blue Flag Certification recently?</li> <li>(a) Six</li> <li>(b) Seven</li> <li>(c) Eight</li> <li>(d) Nine</li> </ul>
129 Legumes are highly nutritious because they are rich in:	<ul><li>(e) None of the above/More than one of the above</li><li>Ram Vilas Paswan started his political career from</li></ul>
<ul><li>(a) fat</li><li>(b) protein</li><li>(c) oil</li><li>(d) starch</li><li>(e) None of the above/More than one of the above</li></ul>	<ul> <li>which political party?</li> <li>(a) Janata Party</li> <li>(b) Bharatiya Lok Dal</li> <li>(c) Samyukta Socialist Party</li> <li>(d) Praja Socialist Party</li> </ul>
<ul> <li>(a) Fruit</li> <li>(b) Stem</li> </ul>	(e) None of the above/More than one of the above
<ul><li>(c) Root</li><li>(d) Flower bud</li><li>(e) None of the above/More than one of the above</li></ul>	42 When did the Election Commission of India issue a Press Note for the General Election to the Legislative Assembly of Bihar, 2020?
(31) Who has been appointed by the Board of Control for Cricket in India as the Head of All India Women's Selection Committee?	<ul> <li>(a) 23<sup>rd</sup> September, 2020</li> <li>(b) 24<sup>th</sup> September, 2020</li> <li>(c) 25<sup>th</sup> September, 2020</li> <li>(d) 26<sup>th</sup> September, 2020</li> <li>(e) None of the above/More than one of the above</li> </ul>
<ul> <li>(a) Mithu Mukherjee</li> <li>(b) Neetu David</li> <li>(c) Renu Margrate</li> <li>(d) V. Kalpana</li> <li>(e) None of the above/More than one of the above</li> </ul>	<b>43</b> In which State, 'Ghar Tak Fiber' Scheme has been launched on 21 <sup>st</sup> September, 2020 through a video conference?
<b>32</b> Who has won the Women's Singles US Open Tennis Tournament, 2020?	<ul> <li>(a) Uttar Pradesh</li> <li>(b) Madhya Pradesh</li> <li>(c) Bihar</li> <li>(d) Karnataka</li> <li>(e) None of the above/More than one of the above</li> </ul>
<ul> <li>(a) Naomi Osaka</li> <li>(b) Bianca Andreescu</li> <li>(c) Sofia Kenin</li> <li>(d) K. Pliskova</li> <li>(e) None of the above/More than one of the above</li> </ul>	<ul> <li>44 Bihar politician Late Raghuvansh Prasad Singh was for the first time elected to which Lok Sabha?</li> </ul>
<b>33</b> Which athlete scored first position in the London Marathon held on 4 <sup>th</sup> October, 2020?	<ul> <li>(a) Tenth Lok Sabha</li> <li>(b) Eleventh Lok Sabha</li> <li>(c) Twelfth Lok Sabha</li> <li>(d) Thirteenth Lok Sabha</li> <li>(e) None of the above/More than one of the above</li> </ul>
<ul> <li>(a) Eliud Kipchoge</li> <li>(b) Shura Kitata</li> <li>(c) Vincent Kipchumba</li> <li>(d) Sisay Lemma</li> <li>(e) None of the above/More than one of the above</li> </ul>	45 Which among the following is <i>not</i> a member of the Quadrilateral Security Dialogue—an informal strategic
$\sqrt{34}$ Which Indian cricketer along with M. S. Dhoni	forum? (a) India (b) Japan
announced retirement from the international cricket on 15 <sup>th</sup> August, 2020?	<ul><li>(c) China</li><li>(d) Australia</li><li>(e) None of the above/More than one of the above</li></ul>

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- irteenth Lok Sabha
- n one of the above
- is not a member of the e—an informal strategic
  - pan
  - ıstralia
  - (e) None of the above/More than one of the above
- (a) Suresh Raina (b) Harbhajan Singh

## BPSC Solved Paper (December 2020)

<ul> <li>Who represented India's perspective in the Fifth BRICS Culture Ministers' Meeting held through a conference in September 2020?</li> <li>(a) Prahlad Singh Patel</li> <li>(b) Ramesh Pokhriyal Nishank</li> <li>(c) Nitin Gadkari</li> <li>(d) Ravi Shankar Prasad</li> <li>(e) None of the above/More than one of the above</li> <li>Where was the 36<sup>th</sup> ASEAN Summit virtually held in June 2020?</li> <li>(a) Thailand</li> <li>(b) Singapore</li> <li>(c) Indonesia</li> <li>(d) Vietnam</li> <li>(e) None of the above/More than one of the above</li> </ul>	<ul> <li>55 On the 100<sup>th</sup> birth anniversary of Rajmata Vijaya Raje Scindia, Prime Minister Narendra Modi released a: <ul> <li>(a) fifty rupees coin</li> <li>(b) fifty rupees note</li> <li>(c) one hundred rupees coin</li> <li>(d) one hundred rupees note</li> <li>(e) None of the above/More than one of the above</li> </ul> </li> <li>56 Which State's short documentary film, Chi Lupo has won Dada Saheb Phalke Award, 2020? <ul> <li>(a) Manipur</li> <li>(b) Nagaland</li> <li>(c) Meghalaya</li> <li>(d) Arunachal Pradesh</li> <li>(e) None of the above/More than one of the above</li> </ul> </li> </ul>
<ul> <li>Which of the following has topped the Human Capital Index in 2020?</li> <li>(a) Japan</li> <li>(b) South Korea</li> <li>(c) Singapore</li> <li>(d) Hong Kong</li> <li>(e) None of the above/More than one of the above</li> <li>Recently in USA, 'Operation MAGA' is related to:</li> </ul>	<ul> <li>(57) Which private sector bank has launched 'e-Kisaan Dhan' app for farmers?</li> <li>(a) Axis Bank</li> <li>(b) HDFC Bank</li> <li>(c) IDBI Bank</li> <li>(d) Kotak Mahindra Bank</li> <li>(e) None of the above/More than one of the above</li> </ul>
<ul> <li>(a) campaign against COVID-19</li> <li>(b) Donald Trump's re-election campaign</li> <li>(c) Joseph Biden's election campaign</li> <li>(d) 'make army great again' campaign</li> <li>(e) None of the above/More than one of the above</li> </ul>	<ul> <li>At the international airport of which city, India launched its first COVID-19 testing facility?</li> <li>(a) Kolkata</li> <li>(b) Delhi</li> <li>(c) Mumbai</li> <li>(d) Bengaluru</li> <li>(e) None of the above/More than one of the above</li> </ul>
<ul> <li>(50) Which Arab state has started first nuclear power plant?</li> <li>(a) Iraq</li> <li>(b) Saudi Arabia</li> <li>(c) United Arab Emirates (d) Egypt</li> <li>(e) None of the above/More than one of the above</li> </ul>	<ul> <li><b>59</b> Rafale fighter aircraft has been formally inducted into the Indian Air Force at which Air Force Station?</li> <li>(a) Hindon (b) Sarsawa</li> <li>(c) Ambala (d) Amritsar</li> <li>(e) None of the above/More than one of the above</li> </ul>
<ul> <li>(a) Egypt</li> <li>(b) Jordan</li> <li>(c) Bahrain</li> <li>(d) Sudan</li> <li>(e) None of the above/More than one of the above</li> </ul>	<ul> <li>(60) The name of India's first indigenous anti-radiation missile is:</li> <li>(a) Tandav</li> <li>(b) Trinetra</li> <li>(c) Saksham</li> <li>(d) Rudram</li> <li>(e) None of the above/More than one of the above</li> </ul>
<ul> <li>52 Which country assumed the role of Chairman of the International Labour Organization's Governing Body for the period of October 2020 till June 2021?</li> <li>(a) Japan</li> <li>(b) New Zealand</li> <li>(c) Australia</li> <li>(d) India</li> <li>(e) None of the above/More than one of the above</li> <li>53 'Operation My Saheli' launched in September 2020</li> </ul>	<ul> <li>In which of the following Harappan cities, furrows of ploughed fields have been found?</li> <li>(a) Kalibangan</li> <li>(b) Dholavira</li> <li>(c) Mohenjo-daro</li> <li>(d) Lothal</li> <li>(e) None of the above/More than one of the above</li> </ul> 62 Triratna or Three Jewels, i.e. right knowledge, right faith, and right action are related to which of the
<ul> <li>aims:</li> <li>(a) to encourage self-defence education among girls</li> <li>(b) to boost the security of women passengers in trains</li> <li>(c) to explore new job opportunities for women</li> <li>(d) to boost awareness against girl child labour</li> <li>(e) None of the above/More than one of the above</li> <li>54 On the occasion of the first anniversary of the Fit India Movement, who gave the Mantra, 'Fitness Ki Dose, Aadha Ghanta Roz (Fitness Dose, Half an Hour</li> </ul>	following?         (a) Buddhism       (b) Hinduism         (c) Jainism       (d) Christianity         (e) None of the above/More than one of the above         (53) Which of the following rulers convened the Fourth Buddhist Council in Kashmir?         (a) Ashoka       (b) Ajatashatru         (c) Kanishka       (d) Kalashoka         (e) None of the above/More than one of the above
<ul> <li>Daily)'?</li> <li>(a) Prime Minister Narendra Modi</li> <li>(b) Union Home Minister Amit Shah</li> <li>(c) Union Health Minister Dr. Harsh Vardhan</li> </ul>	<ul> <li>(c) Finite of the activity finite that one of the activity</li> <li>(d) Which of the following philosophies of India propounded the atom theory?</li> <li>(a) Yoga</li> <li>(b) Nyaya</li> </ul>

- (c) Union Health Minister Dr. I(d) Yoga Guru Baba Ramdev
- (e) None of the above/More than one of the above
- (e) None of the above/More than one of the above

(d) Vaisheshika

(c) Sankhya

<b>65</b> Which Delhi Sultan is known for adopting the 'blood and iron' policy?	<b>75</b> Kol Mutiny of 1831 under Buddho Bhagat took place in which of the following regions?
<ul> <li>(a) Iltutmish</li> <li>(b) Balban</li> <li>(c) Ala-ud-din Khalji</li> <li>(d) Muhammad bin Tughlaq</li> <li>(e) None of the above/More than one of the above</li> </ul>	<ul> <li>(a) Kutch</li> <li>(b) Singhbhum</li> <li>(c) Western Ghats</li> <li>(d) Satara</li> <li>(e) None of the above/More than one of the above</li> </ul>
<ul> <li>66 Which medieval Indian empire was famous for elaborated local self-government?</li> <li>(a) Chalukya</li> <li>(b) Chola</li> <li>(c) Solanki</li> <li>(d) Parmar</li> <li>(e) None of the above/More than one of the above</li> <li>67 Pietra dura is related to which of the following?</li> <li>(a) Decorating the walls with floral designs made of semi-precious stones</li> <li>(b) Building sloping walls in Minars</li> <li>(c) Use of arch in construction</li> <li>(d) Use of marble in buildings</li> <li>(e) None of the above/More than one of the above</li> <li>68 Which Mughal ruler established Karkhanas for painting?</li> <li>(a) Humayun</li> <li>(b) Akbar</li> <li>(c) Jahangir</li> <li>(d) Shah Jahan</li> <li>(e) None of the above/More than one of the above</li> </ul>	<ul> <li>Who spearheaded the 1857 Revolt in Bihar? <ul> <li>(a) Nana Saheb</li> <li>(b) Tatya Tope</li> <li>(c) Kunwar Singh</li> <li>(d) Maulavi Ahmadullah</li> <li>(e) None of the above/More than one of the above</li> </ul> </li> <li>77 Who drew Gandhiji's attention to the plight of indigo peasants in Champaran? <ul> <li>(a) Rajendra Prasad</li> <li>(b) Anugrah Narayan Sinha</li> <li>(c) Acharya Kripalani</li> <li>(d) Raj Kumar Shukla</li> <li>(e) None of the above/More than one of the above</li> </ul> </li> <li>78 Which was the first capital of ancient Mahajanapada Magadh? <ul> <li>(a) Pataliputra</li> <li>(b) Vaishali</li> <li>(c) Champa</li> <li>(d) Anga</li> <li>(e) None of the above/More than one of the above</li> </ul> </li> </ul>
<ul> <li>(e) None of the above/More than one of the above</li> <li>(f) The dual system of governance in Bengal was enforced by: <ul> <li>(a) Warren Hastings</li> <li>(b) William Bentinck</li> <li>(c) Robert Clive</li> <li>(d) Lord Curzon</li> <li>(e) None of the above/More than one of the above</li> </ul> </li> <li>70 Who among the following participated in the Parliament of Religions held in Chicago in 1893?</li> </ul>	<ul> <li>(a) Tribal Movement in Bihar</li> <li>(b) Labour Movement in Bihar</li> <li>(c) Peasant Movement in Bihar</li> <li>(d) Caste Movement in Bihar</li> <li>(e) None of the above/More than one of the above</li> <li>80 Which of the following was Gandhiji's first Satyagraha Movement in India in which he used Civil Disobedience?</li> <li>(a) Champaran</li> <li>(b) Kheda</li> </ul>
<ul> <li>(a) Dayananda Saraswati (b) Swami Vivekananda</li> <li>(c) Mahatma Gandhi (d) Raja Rammohan Roy</li> <li>(e) None of the above/More than one of the above</li> <li>71 Who established Swaraj Party in 1923?</li> <li>(a) Mahatma Gandhi</li> <li>(b) Vallabhbhai Patel</li> <li>(c) C. R. Das and Motilal Nehru</li> <li>(d) B. R. Ambedkar</li> <li>(e) None of the above/More than one of the above</li> <li>72 Who wrote the famous play, "Neel Darpan" in which oppression of indigo farmers is displayed?</li> <li>(a) Sharat Chandra Chatterjee</li> <li>(b) Rabindranath Tagore</li> <li>(c) Barindra Ghosh</li> <li>(d) Dinabandhu Mitra</li> <li>(e) None of the above/More than one of the above</li> </ul>	<ul> <li>(c) Ahmedabad (d) Rowlatt Satyagraha</li> <li>(e) None of the above/More than one of the above</li> <li>81 The largest island of Japan in terms of the geographical area is: <ul> <li>(a) Hokkaido</li> <li>(b) Honshu</li> <li>(c) Shikoku</li> <li>(d) Kyushu</li> <li>(e) None of the above/More than one of the above</li> </ul> </li> <li>82 Greenland is a part of which one of the following</li> </ul>
	<ul> <li>countries?</li> <li>(a) Denmark</li> <li>(b) Finland</li> <li>(c) Canada</li> <li>(d) United Kingdom</li> <li>(e) None of the above/More than one of the above</li> <li>83 Which one of the following countries of the world has the largest Indian population as on December 2018?</li> <li>(a) United Arab Emirates</li> <li>(b) Malaysia</li> <li>(c) United Kingdom</li> <li>(d) United States of America</li> <li>(e) None of the above/More than one of the above</li> </ul>
<ul> <li>73 The famous Battle of Wandiwash in 1760 was fought by the British against whom?</li> <li>(a) The French (b) Spain</li> <li>(c) Mysore (d) Carnatic</li> <li>(e) None of the above/More than one of the above</li> <li>74 Which of the following Acts introduced separate electorate system in India?</li> <li>(a) The Regulating Act, 1773</li> <li>(b) The Charter Act, 1833</li> <li>(c) The Pitt's India Act, 1784</li> <li>(d) The Indian Councils Act, 1909</li> <li>(e) None of the above/More than one of the above</li> </ul>	<ul> <li>Among the following countries, which country has recorded the highest annual gold output (in tonnes) in 2019?</li> <li>(a) Russia</li> <li>(b) Australia</li> <li>(c) China</li> <li>(d) United States of America</li> <li>(e) None of the above/More than one of the above</li> <li>Among the following continents, which one has the highest number of countries?</li> <li>(a) Europe</li> <li>(b) Asia</li> <li>(c) Africa</li> <li>(d) North America</li> <li>(e) None of the above/More than one of the above</li> </ul>

#### **BPSC** Solved Paper (December 2020)

86 The State of India with the highest percentage of tribal population to its total population as per the 2011 Census is: (a) Arunachal Pradesh (b) Nagaland (c) Mizoram (d) Meghalaya (e) None of the above/More than one of the above **87** Which one of the following coffee- growing areas is not in Karnataka? (a) Chikmagalur (b) Coorg (c) Baba Budangin (d) Pulneys (e) None of the above/More than one of the above 88 Which one of the following districts of India is the largest in terms of geographical area? (a) Leh (b) Kutch (c) Jaisalmer (d) Barmer (e) None of the above/More than one of the above **89** The State of India with maximum number of wildlife sanctuaries is: (b) Tamil Nadu (a) Karnataka (c) Maharashtra (d) Madhya Pradesh (e) None of the above/More than one of the above 90 Which of the following rivers flowing in Bihar is a north flowing river? (a) Bagmati (b) Kamla (c) Kosi (d) Gandak (e) None of the above/More than one of the above 91 Atal Tunnel is across which one of the following Himalayan ranges? (a) Zanskar (b) Western Pir Panjal (c) Ladakh (d) Eastern Pir Panjal (e) None of the above/More than one of the above **92** India's 13<sup>th</sup> major port is going to be set up in which State? (a) Kerala (b) Gujarat (c) Maharashtra (d) Tamil Nadu (e) None of the above/More than one of the above 93 Which one of the following States is a leading producer of solar energy in India? (a) Telangana (b) Karnataka (c) Andhra Pradesh (d) Rajasthan (e) None of the above/More than one of the above 94 Among the following pairs of mineral and district, which one is correctly matched? (a) Limestone—Kaimur (b) Mica—Bhagalpur (c) Quartzite—Madhubani (d) Lead-zinc—Gaya (e) None of the above/More than one of the above 95 Which one of the following pairs of industry and place is not correctly matched? (a) Oil refinery—Barauni (b) Cement—Banjari (c) Fertilizer—Bhaurahi (d) Wagon and engineering—Bhagalpur (e) None of the above/More than one of the above 96 Piedmont Swamp Soil is found only in which one of the following districts of Bihar? (a) Madhubani (b) Bhagalpur (c) West Champaran (d) Sitamarhi

- (e) None of the above/More than one of the above
- 97 In which one of the following pairs of Administrative Divisions of Bihar, Ganga river does not flow? (a) Darbhanga—Munger (b) Purnea—Bhagalpur (c) Tirhut—Saran (d) Kosi-Magadh (e) None of the above/More than one of the above **98** Among the following pairs of tribe and district, which one is not correctly matched? (a) Santhal—Banka (b) Munda—Jamui (c) Oraon—Supaul (d) Kharwar—Bhagalpur (e) None of the above/More than one of the above **99** What is the percentage of all types of forest area to the total geographical area of Bihar State? (a) 7.27 (b) 6.87 (c) 3.21 (d) 12.77 (e) None of the above/More than one of the above 100 Which one of the following districts is having the only National Park of Bihar? (a) Nalanda (b) Bhagalpur (c) West Champaran (d) East Champaran (e) None of the above/More than one of the above 101) Who won the bid to construct the new Parliament building recently? (a) L&T Limited (b) Reliance Projects Limited (c) Tata Projects Limited (d) The National Highways Authority of India (e) None of the above/More than one of the above 102 Which Article in the Indian Constitution is related with the establishment of the Election Commission of India? (a) Article 324 (b) Article 148 (c) Article 342 (d) Article 325 (e) None of the above/More than one of the above 103 Who is the Head of the National Commission for Woman at present? (a) Mamta Sharma (b) Lalitha Kumaramangalam (c) Rekha Sharma (d) Smriti Irani (e) None of the above/More than one of the above 104 What is meant by 'Rule of Law'? (a) One act for all and one judiciary for all (b) One act for all and one State for all (c) One State for all and one judiciary for all (d) All acts for one and one judiciary for all (e) None of the above/More than one of the above 105 Which Article gives the list of 29 functions to be performed by the Panchayati Raj Institutions? (a) Article 243(H) (b) Article 243(E) (c) Article 243(F) (d) Article 243(G) (e) None of the above/More than one of the above 106 When was the Citizenship (Amendment) Act passed? (a) 11<sup>th</sup> December, 2018 (b) 11<sup>th</sup> December, 2019
  - (c) 11<sup>th</sup> October, 2019
    (d) 11<sup>th</sup> October, 2020
    (e) None of the above/More than one of the above
  - **107** The legislative origins of the 73<sup>rd</sup> Constitutional Amend-
  - ment Act can be traced back to which Constitutional Amendment Bill?
    - (a) 61<sup>st</sup> Constitutional Amendment Bill
    - (b) 62<sup>nd</sup> Constitutional Amendment Bill

- (c) 63<sup>rd</sup> Constitutional Amendment Bill
- (d) 64<sup>th</sup> Constitutional Amendment Bill
- (e) None of the above/More than one of the above
- 108 Which company established its factory in 1632 at Patna, Bihar?
  - (a) British East India Company
  - (b) Dutch East India Company
  - (c) Portuguese East India Company
  - (d) French East India Company
  - (e) None of the above/More than one of the above
- **109** Which one of the following is *not* the characteristic of decentralization?
  - (a) Autonomy
  - (b) People's participation
  - (c) To instil non-confidence among local communities
  - (d) To empower local communities
  - (e) None of the above/More than one of the above
- 110 Which Act is *not* the landmark in the development of the Constitution during the British Rule?
  - (a) The Regulating Act, 1773
  - (b) The Charter Act, 1833
  - (c) The Government of India Act, 1919
  - (d) The Protection of Civil Rights Act, 1955
  - (e) None of the above/More than one of the above
- Which one among the following is *not* an objective of food management in India?
  - (a) Distribution of food grains
  - (b) Procurement of food grains
  - (c) Maintenance of food grains buffer stock
  - (d) Export of food grains
  - (e) None of the above/More than one of the above
- **112** Revenue deficit in India implies that:
  - (a) the Indian Government needs to borrow in order to finance its expenses which will create capital assets
  - (b) the Indian Government needs to borrow in order to finance its expenses which do not create capital assets
  - (c) the Indian Government needs to borrow from the Reserve Bank of India against government securities
  - (d) the Indian Government needs to borrow from international financial institutions
  - (e) None of the above/More than one of the above
- (113) Which of the following countries is India's top trading partner in 2019-20?
  - (a) USA

a) USA	(b) China
	(d) Saudi Ar

- (c) UAE (d) Saudi Arabia (e) None of the above/More than one of the above
- 14 Which of the following infrastructure sectors of India is related with Bharatmala Project?
  - (a) Telecom sector (b) Railways
  - (d) Port sector (c) Road infrastructure
  - (e) None of the above/More than one of the above
- **Which of the following agencies releases the index of** industrial production to measure industrial performance in India?
  - (a) The National Sample Survey Office (NSSO)
  - (b) The Reserve Bank of India (RBI)
  - (c) The Central Statistics Office (CSO)
  - (d) The Indian Statistical Institute (ISI)
  - (e) None of the above/More than one of the above

- **16** According to the Ease of Doing Business Report, 2020, India improved it's rank from:
  - (a) 77 in previous year to 63<sup>rd</sup> position
  - (b) 130 in previous year to 100<sup>th</sup> position
  - (c) 100 in previous year to 77<sup>th</sup> position
  - (d) 77 in previous year to 67<sup>th</sup> position
  - (e) None of the above/More than one of the above
- 117) To improve institutional agricultural credit flow, what credit target for 2020-21 has been fixed in the Union **Budget of India?** 
  - (a) ₹ 10 lakh crore (b) ₹ 13.5 lakh crore
  - (c) ₹ 15 lakh crore (d) ₹ 16.5 lakh crore
  - (e) None of the above/More than one of the above
- **118** The objective of PM-KUSUM Scheme is:
  - (a) to reduce farmers' dependence on monsoon for irrigation
  - (b) to reduce farmers' dependence on moneylenders for credit
  - (c) promotion of floriculture in India
  - (d) to remove farmers' dependence on diesel and kerosene and to link pump sets to solar energy
  - (e) None of the above/More than one of the above
- 19 Which of the following commercial banks of India comes in top 100 global banks?
  - (a) ICICI Bank (b) SBI
  - (c) HDFC Bank (d) Kotak Mahindra Bank
  - (e) None of the above/More than one of the above
- 120) The Government of India announced a new scheme 'NIRVIK' in the Budget for 2020-21 Which of the following sectors of economy will take the benefit from this scheme?
  - (a) Agriculture sector (b) Industrial sector
  - (c) Health sector (d) Export sector
  - (e) None of the above/More than one of the above
- 121) Bihar Government has introduced the Comprehensive Financial Management System (CFMS) on 1st April, 2019. This system:
  - (a) will make all financial activities in the State online and paperless
  - (b) will solve the problem of NPA of banks
  - (c) will ensure effective implementation of State projects
  - (d) will manage State Government finances including local bodies
  - (e) None of the above/More than one of the above
- 122) The Government of India conferred the Krishi Karman Award to Bihar State on 2<sup>nd</sup> January, 2020. This award was given for:
  - (a) production and productivity of maize and wheat
  - (b) food grain production
  - (c) production of rice
  - (d) production of oilseeds
  - (e) None of the above/More than one of the above
- 123 Bihar Government launched a new scheme 'Satat Jivikoparjan Yojana" in August 2018. The objective of this scheme is:
  - (a) to provide unemployment allowance to youth
  - (b) to provide employment in rural areas through local bodies
  - (c) to provide sustainable income generating assets to extremely poor households

- (d) to provide free training for skill upgradation of youth (e) None of the above/More than one of the above 124 Which of the following is *not* included in Seven **Resolves (Saat Nishchay) of Bihar Government?** (a) Women employment (b) Clean drinking water (c) Supply of electricity to all households (d) Child welfare (e) None of the above/More than one of the above 125) The per capita Net State Domestic Product at constant prices for Bihar is less than the country. In the year 2018-19, it was: (a) 75 percent of the national average (b) 60 percent of the national average (c) 50 percent of the national average (d) 33 percent of the national average (e) None of the above/More than one of the above 126 In which of the following colleges, Gandhiji had studied? (a) Samaldas College, Bhavnagar (b) Dharmendrasinhji College, Rajkot (c) Gujarat College, Ahmedabad (d) Bahauddin College, Junagadh (e) None of the above/More than one of the above 127) Which of the following persons had participated actively in the Revolt of 1857? (a) Nana Saheb (Kanpur) (b) Begum Hazrat Mahal (Lucknow) (c) Maulavi Ahmadullah (Faizabad) (d) Begum Zeenat Mahal (Delhi) (e) None of the above/More than one of the above 128 About which Act, Jawaharlal Nehru had said, "We were provided with a car with all brakes and no engine"? (a) Act of 1858 (b) Act of 1909 (c) Act of 1919 (d) Act of 1935 (e) None of the above/More than one of the above **129** For how many days did Dandi March last? (a) 10 days (b) 20 days (c) 24 days (d) 30 days (e) None of the above/More than one of the above **130** Who is the author of the popular song, Sarfaroshi Ki Tamanna Ab Hamare Dil Mein Hai? (a) Surya Sen (b) Chandra Shekhar Azad (c) Sardar Bhagat Singh (d) Ram Prasad Bismil (e) None of the above/More than one of the above 131 Which movement was started as a reaction to the Partition of Bengal?
  - (a) Non-Cooperation Movement
  - (b) Civil Disobedience Movement
  - (c) Swadeshi Movement
  - (d) Purna Swaraj Movement
  - (e) None of the above/More than one of the above
- **\132** Who among the following advocates had appeared for the INA trials at Delhi in 1945-46?
  - (a) Dr. Rajendra Prasad (b) Bhulabhai Desai
  - (c) K. M. Munshi (d) Sardar Patel
  - (e) None of the above/More than one of the above

- 133 Where did Madam Cama unfurl India's tricolour flag of freedom?
  - (a) Paris (b) London
  - (c) Stuttgart (d) Geneva
  - (e) None of the above/More than one of the above
- 134 Which of the following pairs is correct?
  - (a) Vinoba Bhave—Second Individual Satyagrahi
  - (b) C. R. Das—Deshbandhu
  - (c) William Wedderburn-Congress President in 1907
  - (d) Shyamji Krishna Varma—Founder of India House in Paris
  - (e) None of the above/More than one of the above
- **135** Which day was declared as 'Purna Swaraj Day' by the Indian National Congress?
  - (a) 26-01-1930 (b) 15-08-1947
  - (c) 30-01-1948 (d) 31-12-1950
  - (e) None of the above/More than one of the above
- 136 When was Bihar established?
  - (a) 1911 (b) 1912 (c) 1913 (d) 1914
    - (e) None of the above/More than one of the above
- **137** In Tinkathia System in Bihar, how much land was to be reserved for indigo cultivation?
  - (a) 01/10 (b) 01/03
  - (c) 03/20 (d) 03/25
  - (e) None of the above/More than one of the above
- 138 Who was the first Chief Minister of Bihar?
  - (a) Shri Krishna Singh (b) Satya Pal Malik
  - (c) Nitish Kumar (d) Rabri Devi
  - (e) None of the above/More than one of the above
- **139** Where was the first Congress Session in Bihar held?
  - (a) Patna (b) Gaya
  - (c) Muzaffarpur (d) Darbhanga
  - (e) None of the above/More than one of the above
- 140 Which title was given to Jayaprakash Narayan?
  - (a) Praja Hitechhu (b) Lok Nayak
  - (c) Lokmanya (d) Rashtra Nayak
  - (e) None of the above/More than one of the above
- **141** The missing number in the sequence 4, 18, 48, 100,?, 294, 448 is:
  - (a) 94 (b) 164 (c) 180 (d) 192
  - (e) None of the above/More than one of the above
- **142** If  ${}^{2n}$  C<sub>3</sub>:  ${}^{n}$ C<sub>2</sub> = 44: 3, then the value of *n* is:
  - (a) 1 (b) 6 (c) 11 (d) 4
- (e) None of the above/More than one of the above
- **143** If the average of *m* numbers is  $n^2$  and that of *n* numbers is  $m^2$ , then the average of m + n numbers is:
  - (a)  $\frac{\dot{n}}{m}$  (b)  $\frac{m}{n}$  (c) mn (d) m-n
  - (e) None of the above/More than one of the above
- In a group of athletic teams in a school, 21 are in the basketball team, 26 in the hockey team and 29 in the football team. If 14 play hockey and basketball, 12 play football and basketball, 15 play hockey and football, 8 play all the three games, then how many play football only?
  - (a) 10 (b) 29 (c) 21 (d) 18
  - (e) None of the above/More than one of the above

- Mohan can do a bit of work in 25 days which can be completed by Sohan in 20 days. Both together labour for 5 days and afterward Mohan leaves off. How long will Sohan take to complete the remaining work?
  - (a) 20 days (b) 11 days (c) 14 days (d) 21 days
  - (e) None of the above/More than one of the above
- **146** A clock is started at 12:00 noon. By 10 minutes past 5:00, the hour hand has turned through:
  - (a)  $135^{\circ}$  (b)  $145^{\circ}$  (c)  $155^{\circ}$  (d)  $165^{\circ}$
  - (e) None of the above/More than one of the above
- **147** Which one of the following *cannot* be the square of a natural number?
  - (a) 26569 (b) 143642 (c) 30976 (d) 28561
  - (e) None of the above/More than one of the above

## 148 Given that,

(a) 4

217x + 131y = 913

- 131x + 217y = 827
- then *x* and *y* are respectively:
- (a) 5 and 7 (b) 3 and 2 (c) -5 and -7 (d) 2 and 5
- (e) None of the above/More than one of the above

$$\frac{149}{598 + 479} \frac{(598 + 479)^2 - (598 - 479)^2}{598 \times 479} = 5$$

**(b)** 10 **(c)** 132 **(d)** 8

- (e) None of the above/More than one of the above
- **150** The population of a town is 176400. If it increases annually at the rate of 5%, then what will be its population after two years?
  - (a) 194481 (b) 296841 (c) 394481 (d) 396841
  - (e) None of the above/More than one of the above

## **ANSWERS** WITH EXPLANATION

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

## Explanation:

 Infrared radiation is a type of electromagnetic radiation that has a longer wavelength than visible light but shorter than microwaves.

• It is often used in medical applications because it can penetrate deep into tissues without causing damage to the skin or other tissues on the surface.

• Infrared radiation is commonly used in the treatment of muscle aches and pains, as well as for other conditions such as arthritis, fibromyalgia, and sports injuries.

#### **2** Option (d) is correct.

#### Explanation:

Total Resistance (R) =  $1.403 \text{ k}\Omega$ , R<sub>1</sub> =  $2.0 \text{ k}\Omega$ Let R<sub>2</sub> be the required resistance. Now, for parallel

combination: 
$$\frac{1}{R} = \frac{1}{R_1} + \frac{1}{R_2}$$
  
 $\frac{1}{R_2} = \frac{1}{R} - \frac{1}{R_1} = \frac{1}{1.403} - \frac{1}{2.0}$   
 $R_2 = \frac{2.0 \times 1.403}{2.0 - 1.403} = \frac{2.806}{0.597}$ 

 $R_2 = 4.7 \text{ k}\Omega$ 

## **3** Option (b) is correct.

#### **Explanation**:

• On heating, the resistance of a semiconductor generally decreases. This happens because the heat causes more electrons to become free, which increases the number of charge carriers in the material. As a result, the conductivity of the material increases and the resistance decreases.

• However, there are some exceptions to this behavior. For example, in some semiconductors, such as doped silicon, heating can cause an increase in resistance due to the effects of dopants.

 Overall, the behavior of a semiconductor on heating depends on its specific material properties and doping.

#### **4** Option (d) is correct.

#### Explanation:

• Faraday constant is a universal constant, denoted by the symbol F, and has a value of approximately 96,485 coulombs per mole (C/mol).

• It represents the amount of electric charge that is carried by one mole of electrons or ions. This constant is named after Michael Faraday, a British scientist who contributed significantly to the field of electrochemistry.

## **5** Option (c) is correct.

#### Explanation:

• A 'light-year' is a unit of distance used in astronomy.

• It is defined as the distance that light travels in one year in a vacuum, which is approximately 9.46 trillion kilometers or 5.88 trillion miles.

#### **6** Option (c) is correct.

#### Explanation:

• When light travels from one medium to another, its velocity and wavelength change, which is governed by Snell's law.

• The refractive index of the medium also changes, which is a measure of how much the speed of light is reduced when it passes through the medium.

• However, the frequency of light remains constant when it travels from one medium to another.

• The frequency of light is a fundamental property of light, which determines the color or the energy of the light.

#### **7** Option (a) is correct.

#### Explanation:

• Electromagnetic waves are a type of wave that can propagate without a medium. This means that they can travel through a vacuum.

■ The velocity of electromagnetic waves is 3×10<sup>8</sup> ms<sup>-1</sup>.

• This value is also commonly referred to as the speed of light, as electromagnetic waves include visible light as well as other forms of electromagnetic radiation such as radio waves, microwaves, infrared radiation, ultraviolet radiation, X-rays, and gamma rays.

## **BPSC** Solved Paper (December 2020)

## 8 Option (b) is correct.

#### **Explanation:**

• The first man who placed his foot on the moon is Neil Armstrong.

• He was an American astronaut and a part of the Apollo 11 mission, which was the first manned mission to land on the moon.

• On July 20, 1969, Neil Armstrong stepped out of the lunar module and uttered the famous words, "That's one small step for man, one giant leap for mankind".

#### **9** Option (b) is correct.

#### **Explanation:**

• The number of neutrons in a nucleus can be calculated by subtracting the atomic number (number of protons) from the mass number (number of protons + number of neutrons).

• The atomic number of plutonium (Pu) is 94, which means it has 94 protons in its nucleus.

• The nuclide <sup>94</sup>Pu<sub>242</sub> means that this particular isotope has a mass number of 242.

Number of neutrons = Mass number – Atomic number

Number of neutrons = 242 - 94

Number of neutrons = 148

Therefore, the number of neutrons in the nucleus of the plutonium nuclide ( $^{94}Pu_{242}$ ) is 148.

#### **10** Option (d) is correct.

#### **Explanation**:

Viscosity is a measure of a fluid's resistance to flow.

• The higher the viscosity, the more resistant the fluid is to flow.

• Honey has a much higher viscosity than water, air, and blood. This is because honey is a thick, syrupy liquid composed of sugars and other organic compounds, while water is a much simpler and lighter molecule.

• Air is a gas and has very low viscosity, and blood is a liquid with some viscosity, but not as high as honey.

#### **11** Option (c) is correct.

#### Explanation:

Milk is not a poor source of calcium or protein.

• In fact, milk is well known for its high calcium content, which is important for building and maintaining strong bones and teeth.

• Milk is also a good source of protein, which is important for growth and repair of body tissues.

• However, milk is a poor source of vitamin C and carbohydrates.

• Carbohydrates are present in milk in the form of lactose, but they are not as concentrated as they are in other foods like bread, rice, or pasta.

#### **12** Option (a) is correct.

#### Explanation:

• The breath test conducted by police to check drunken driver has potassium dichromate-sulphuric acid on the filter paper.

• The test involves the oxidation of alcohol in the exhaled breath sample by the potassium dichromate-sulfuric acid solution.

• The color change of the solution indicates the presence of alcohol in the breath, which can then be used to estimate the blood alcohol concentration of the person being tested.

## **13** Option (c) is correct.

## Explanation:

• The enzyme that converts glucose to ethyl alcohol is zymase.

• It is a complex of various enzymes found in yeasts and is involved in the process of alcoholic fermentation.

 During this process, zymase breaks down glucose into pyruvate, which is then converted to ethanol and carbon

pyruvate, which is then converted to ethanol and carbon dioxide.

• Maltase, invertase, and diastase are other enzymes that are involved in the breakdown of different types of sugars, but not in the conversion of glucose to ethyl alcohol.

## 14 Option (b) is correct.

## Explanation:

Limewater is turned milky by carbon dioxide (CO<sub>2</sub>).

• When carbon dioxide is passed through limewater, it reacts with calcium hydroxide (present in limewater) to form calcium carbonate, which is insoluble and appears as a milky white precipitate.

- The chemical equation for this reaction is:
  - $Ca(OH)_2 + CO_2 \rightarrow CaCO_3 + H_2O$

• This reaction is commonly used as a test for the presence of carbon dioxide gas.

## **15** Option (d) is correct.

## Explanation:

• Incomplete burning of petrol and diesel results in the production of carbon monoxide (CO).

• Carbon monoxide is a toxic gas and can be harmful when inhaled in large amounts. It is produced when there is not enough oxygen to completely burn the fuel.

• Nitric oxide (NO) and nitrogen dioxide (NO<sub>2</sub>) are also produced during combustion, but they are usually formed at higher temperatures and in the presence of excess oxygen.

• Carbon dioxide  $(CO_2)$  is also produced during the combustion of fuels, but it is a product of complete combustion and is not harmful in small amounts.

#### Incomplete combustion

• Incomplete combustion is a process in which fuel (such as petrol and diesel) reacts with oxygen to produce carbon monoxide (CO) and water.

## **16** Option (d) is correct.

## Explanation:

• If the pH of a solution changes from 3 to 6, it means that the solution has become less acidic (moving towards neutral), and the hydrogen ion concentration has decreased.

• The pH of a solution is defined as the negative logarithm of the hydrogen ion concentration ( $pH = -\log[H^+]$ ).

■ To calculate the change in hydrogen ion concentration, we can use the formula:

$$\frac{[H^+]^2}{[H^+]^1} = 10pH^2 - pH^1$$

where  $[H^+]^2$  is the hydrogen ion concentration at pH<sup>6</sup>, [H<sup>+</sup>]<sup>1</sup> is the hydrogen ion concentration at  $pH^3$ , and  $pH^2 - pH^1$  is the change in pH.

Substituting the values given in the question, we get:

 $\frac{\left[H^{+}\right]^{2}}{\left[H^{+}\right]^{1}} = 10^{(6-3)} = 10^{3}$ 

Simplifying the equation, we get:

 $[H^+]^2 = [H^+]^1 \times 10^{(-3)}$ 

■ Therefore, the H<sup>+</sup> ion concentration will decrease 1000 times when the pH of a solution changes from 3 to 6.

#### **17** Option (a) is correct.

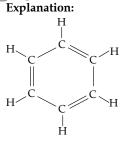
Explanation: Sublimation is a process in which a solid substance directly changes its state from solid to gas without passing through the liquid state.

■ The mixture of sand and naphthalene can be separated by the process of sublimation.

 Naphthalene is a solid substance that has a low melting point and readily undergoes sublimation. On the other hand, sand is a non-volatile substance that cannot undergo sublimation.

 Therefore, when the mixture of sand and naphthalene is heated, naphthalene will undergo sublimation leaving behind sand as a residue.

#### **18** Option (c) is correct.



■ In terms of its structure, benzene consists of six carbon-hydrogen (C - H) bonds and six carbon-carbon (C - C) bonds, resulting in a total of 12 sigma bonds. Additionally, there are three carbon-carbon double bonds (C=C), which are pi bonds.

Therefore, the total number of bonds in benzene are 12 sigma bonds and 3 pi bonds.

In total, benzene is comprised of 15 covalent bonds. Benzene

Benzene is a basic aromatic hydrocarbon, first discovered by Faraday in 1825.

■ Its molecular formula is C<sub>6</sub>H<sub>6</sub> and molar mass is 78.11 g/mol.

■ Benzene has a melting point of 5.5°C and boiling point of 80°C, making it highly inflammable and stable. At room temperature, it exists as a colourless liquid and is a natural component of crude oil.

## **19** Option (d) is correct.

#### **Explanation**:

 Urea is an organic compound with the chemical formula CO(NH<sub>2</sub>)<sub>2</sub>.

 It is an important nitrogen-containing compound and is the main nitrogen excretion product of many animals, including mammals. Urea is also used in the production of fertilizers and various industrial applications.

■ The elements present in urea are carbon (C), hydrogen (H), nitrogen (N), and Oxygen (O).

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

#### Explanation:

The poorest conductor of heat among the following is lead.

Heat conductivity is a measure of a material's ability to conduct heat.

Metals are generally good conductors of heat due to their high thermal conductivity values. However, different metals have different thermal conductivity values.

• Lead is the poorest conductor of heat among the given options. This is because lead has a relatively low thermal conductivity value compared to the other metals listed.

 Copper, for example, is a very good conductor of heat and has a high thermal conductivity value. Mercury and zinc are also better conductors of heat than lead.

## **21** Option (d) is correct.

## **Explanation**:

■ The vitamin which is effective in blood clotting is vitamin K.

 Vitamin K is an essential nutrient required for blood clotting.

 It plays a key role in the coagulation process, which is the body's mechanism for stopping bleeding.

■ Specifically, vitamin K is required for the activation of certain proteins in the blood that are involved in the clotting process.

Deficiencies in vitamin K can lead to a variety of bleeding disorders, including excessive bleeding and bruising.

#### **22** Option (a) is correct.

Explanation:

■ The female sex hormone is estrogen. Estrogen is a group of hormones that are responsible for the development and regulation of the female reproductive system and secondary sex characteristics.

Estrogen is produced mainly by the ovaries in females, but it is also produced in smaller amounts by the adrenal glands and other tissues.

Estrogen plays a key role in the menstrual cycle and helps to prepare the uterus for pregnancy.

## **23** Option (a) is correct.

**Explanation**:

The Nobel Prize for developing treatment of Parkinson's disease was given to Arvid Carlsson in Physiology or Medicine in 2000 for his work on neurotransmitters, particularly dopamine.

 He discovered that dopamine is a key neurotransmitter in the brain and that its depletion is associated with Parkinson's disease, a degenerative disorder of the nervous system.

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

Explanation:

The malfunctioning of the thyroid gland is primarily due to the deficiency of iodine.

• The thyroid gland requires iodine to produce its hormones, including thyroxine (T4) and triiodothyronine (T3). These hormones are critical for the regulation of metabolism and the proper functioning of several bodily systems, including growth and development, body temperature, and heart rate.

• Without sufficient iodine, the thyroid gland cannot produce enough hormones, leading to several health problems, including goiter, hypothyroidism, and hyperthyroidism.

• However, severe deficiencies of these nutrients can lead to secondary complications that may indirectly impact thyroid health. For example, severe iron deficiency can lead to anemia, which may cause fatigue and other symptoms similar to hypothyroidism.

#### **25** Option (c) is correct.

## **Explanation**:

• The sensitive area of the human tongue to bitterness is primarily the posterior part, also known as the back of the tongue.

• The tongue is covered with tiny bumps called papillae, and each papilla contains many taste buds.

• The taste buds are made up of sensory cells that respond to different flavors, including sweet, salty, sour, umami, and bitter.

• The posterior part of the tongue contains the largest and most sensitive taste buds, which are especially responsive to bitter compounds.

• The tip of the tongue is more sensitive to sweet and salty tastes, while the middle part is more sensitive to sour tastes.

• The edges of the tongue are responsible for detecting the texture of food, such as smoothness, roughness, or spiciness.

## **26** Option (b) is correct.

#### **Explanation:**

• Ginger is a type of rhizome, which is a modified stem that grows horizontally underground. Rhizomes have nodes and internodes, which are characteristic of stems. Nodes are the points on a stem where leaves, buds, and branches can grow, while internodes are the spaces between the nodes.

• In contrast, roots do not have nodes and internodes. Instead, roots have root hairs that absorb water and nutrients from the soil. Roots also typically lack leaves and buds.

• While ginger does store food material, this is not a defining characteristic of stems versus roots.

• Additionally, while ginger does not have chlorophyll, this is also not a defining characteristic of stems versus roots.

## **27** Option (a) is correct.

#### **Explanation**:

• Fructose is a monosaccharide or simple sugar that is naturally found in many fruits and vegetables, as well as in honey. It is considered the sweetest of all natural sugars, with a sweetness level that is approximately 1.7 times greater than that of table sugar (sucrose).

• Glucose is another monosaccharide that is commonly found in fruits, vegetables, and honey, but it is not as sweet as fructose.

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• Maltose is a disaccharide, which is made up of two glucose molecules, and is found in grains like barley and malt. It is not as sweet as fructose or sucrose.

• Sucrose, or table sugar, is a disaccharide made up of glucose and fructose and is commonly used as a sweetener in foods and drinks. While it is sweet, it is not as sweet as fructose.

## **28** Option (a) is correct.

## Explanation:

• Apple is not considered as true fruit because Apple fruit develops from the thalamus part of the flower.

• Fruits are the matured ovary of a flower, and can be classified as True or False fruit. There are three main types of fruits : Simple fruit, Aggregate fruit, and Composite fruit.

• True Fruit develops from a matured and fertilized ovary, where the ovules inside the ovary form the seeds. The outer layer of the true fruit, which is edible, is called the pericarp.

• Simple fruits are formed from a single ovary of a flower and can either be dry or fleshy.

• Aggregate fruits are formed from a multicarpellary apocarpous ovary of a flower, which contains many ovaries fused together. Examples of aggregate fruits are the Etaerio of follicles and the Etaerio of achenes.

• Composite fruit develops from the complete inflorescence of the plant.

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

## Explanation:

• Legumes are a family of plants that includes beans, lentils, peas, and peanuts, among others. They are highly nutritious and a valuable source of protein, especially for vegetarians and vegans who may not consume meat. Legumes are also rich in complex carbohydrates, dietary fiber, vitamins, and minerals.

• Legumes are a good source of plant-based protein because they contain all nine essential amino acids, which are the building blocks of protein that the body cannot produce on its own.

• In addition, legumes are relatively low in fat and are an excellent source of fiber, which helps to promote digestive health and reduce the risk of heart disease, diabetes, and certain types of cancer.

## **30** Option (d) is correct.

## Explanation:

• Clove, a spice, is obtained from the flower buds of the clove tree (Syzygium aromaticum).

• The clove tree is an evergreen tree that is native to Indonesia but is now cultivated in many tropical regions around the world.

## **31** Option (b) is correct.

## Explanation:

• Neetu David, a former left-arm spinner and righthanded batter, was appointed as the head of the All-India Women's Selection Committee by the BCCI in September 2020.

• She is renowned for being the second-highest wickettaker among Indian women cricketers, after Jhulan Goswami.

## **32** Option (a) is correct.

## Explanation:

• The Women's Singles US Open Tennis Tournament, 2020 was held from August 31 to September 13, 2020 and the winner of the tournament was Naomi Osaka of Japan.

• This victory was also Naomi Osaka's third Grand Slam title overall, having previously won the Australian Open in 2019 and the US Open in 2018.

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

## **Explanation**:

• Shura Kitata secured the first position in the London Marathon held on 4<sup>th</sup> October, 2020.

• Shura Kitata is an Ethiopian long-distance runner who won the men's elite race with a time of 2 hours, 5 minutes, and 41 seconds.

• He finished ahead of the pre-race favorite, Eliud Kipchoge of Kenya, who came in second place.

## **34** Option (a) is correct.

## Explanation:

■ The Indian cricketer who announced retirement from international cricket on 15<sup>th</sup> August 2020, along with M. S. Dhoni, was Suresh Raina.

• Raina made his international debut in July 2005 and went on to play 18 Tests, 226 ODIs and 78 T20Is for India.

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

## Explanation:

• The veteran Indian actor and director, Paresh Rawal, has been appointed as the new chairperson of the National School of Drama (NSD) on September 10, 2020. He was appointed for a period of four years.

• He was appointed by the President of India, Ram Nath Kovind, on the recommendations of the Ministry of Culture.

#### The National School of Drama, Delhi

• The National School of Drama, established in 1959, is an autonomous organization that is fully financed by the Ministry of Culture, Government of India.

• It became an independent entity in 1975 and provides a three-year, full-time, residential training program in various aspects of theatre.

## **36** Option (b) is correct.

#### **Explanation**:

• In August 2018, Dr. G. Satheesh Reddy was appointed as the Chairman of the Defence Research and Development Organisation (DRDO) of India.

■ He assumed the position on August 26, 2018, succeeding S. Christopher.

# Defence Research and Development Organization (DRDO)

• The Defence Research and Development Organisation (DRDO) is a governmental agency in India that focuses on research and development for military purposes.

• It has its headquarters in Delhi, India. The organization was established in 1958 following the merger of the Technical Development Establishment, the Directorate of Technical Development and Production, and the Defence Science Organisation.

## **37** Option (c) is correct.

## Explanation:

• Dr. Bushra Ateeq from IIT, Kanpur & Dr. Ritesh Agarwal from PGIMER, Chandigarh have been awarded Shanti Swarup Bhatnagar Prize, 2020 in Medical Sciences category.

• Shanti Swaroop Bhatnagar was a renowned Indian scientist and administrator.

## ■ He earned the title of "Father of Indian Science".

#### Shanti Swaroop Bhatnagar Prize

• The 'Shanti Swarup Bhatnagar (SSB) Prize for Science and Technology' is an esteemed award named after Dr. Shanti Swarup Bhatnagar, the founder Director of the Council of Scientific & Industrial Research (CSIR) in India.

■ The prize money of ₹ 5,00,000 (Rupees five lakh only) is given to the winners, who are recognized for their remarkable contributions in the following areas:

Biological Sciences, Chemical Sciences, Earth, Atmosphere, Ocean and Planetary Sciences, Engineering Sciences, Mathematical Sciences, Medical Sciences, and Physical Sciences.

■ The award was first presented in 1958.

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

**Explanation:** The Nobel Peace Prize for 2020 was awarded to the World Food Programme (WFP) "for its efforts to combat hunger, for its contribution to bettering conditions for peace in conflict-affected areas and for acting as a driving force in efforts to prevent the use of hunger as a weapon of war and conflict".

## **39** Option (a) is correct.

#### Explanation:

• The Indian film actor included in the Time Magazine's list of hundred most influential people of 2020 is Ayushmann Khurrana.

• Ayushmann Khurrana is a popular Bollywood actor known for his unconventional roles in movies that often deal with social issues.

• In 2020, he was recognized by Time Magazine as one of the hundred most influential people in the world for his contribution to Indian cinema and his ability to connect with audiences on a deeper level through his movies.

## 40 Option (c) is correct.

Explanation:

• The prestigious 'Blue Flag' certification has been awarded to eight Indian beaches including Shivrajpur in Gujarat, Ghoghla in Diu, Kasarkod, and Padubidri in Karnataka, Kappad in Kerala, Rushikonda in Andhra Pradesh, Golden in Odisha, and Radhanagar in Andaman and Nicobar Islands.

• In addition, India was awarded the third prize by the jury for "International Best Practices" in pollution control in coastal regions.

## The Blue Flag certification

• The Blue Flag certification is a widely acknowledged eco-label awarded by the "Foundation for Environment Education, Denmark".

• The recommendations for the Blue Flag certification are made by a national jury comprising renowned environmentalists and scientists from various organizations, such as the United Nations Environment Programme (UNEP), the United Nations World Tourism Organisation (UNWTO), the Foundation for Environmental Education (FEE) based in Denmark, and the International Union for Conservation of Nature (IUCN).

• As of August, 2023, the prestigious 'Blue Flag' certification has been awarded to 12 Indian Beaches.

#### 4) Option (c) is correct. Explanation:

• Ram Vilas Paswan started his political career from the Samyukta Socialist Party.

• He joined the party in the 1960s and was actively involved in student politics at the time.

• Later, he became a member of the Bihar Legislative Assembly and went on to hold various important positions in different political parties throughout his career.

• He served as a member of the Janata Party, the Bharatiya Lok Dal, and the Indian National Congress before founding his own party, the Lok Janshakti Party (LJP), in 2000.

## **42** Option (c) is correct.

## **Explanation**:

• The Election Commission of India issued a Press Note for the General Election to the Legislative Assembly of Bihar, 2020 on 25<sup>th</sup> September, 2020.

• The press note outlined various important dates and guidelines for the election, including the last date for nomination, polling dates, and counting dates.

• The Bihar Legislative Assembly Election was held in three phases between 28<sup>th</sup> October and 7<sup>th</sup> November 2020.

## **43** Option (c) is correct.

## Explanation:

■ On 21<sup>st</sup> September 2020, Prime Minister Narendra Modi inaugurated the Ghar Tak Fibre scheme and nine highway projects in Bihar worth ₹ 14,000 crores through a video-conferencing session.

• The Ghar Tak Fibre scheme is aimed at providing high speed broadband connectivity through optical fiber to approximately 45,945 villages in Bihar.

• Additionally, the scheme is expected to increase local employment opportunities by utilizing local workers as part of the Bharat Net initiative.

• The Ghar Tak Fibre project is a collaboration between the Department of Telecom (DoT), Ministry of Electronics & Information Technology, and Common Service Centres (CSC).

## 44 Option (b) is correct.

## Explanation:

• Late Raghuvansh Prasad Singh, the Bihar politician, was first elected to the Eleventh Lok Sabha.

• He served as a Member of Parliament (MP) from 1996

to 2009, representing the Vaishali constituency of Bihar.

• He was also the Union Minister for Rural Development in the UPA-I government from 2004 to 2009.

• Raghuvansh Prasad Singh was a prominent leader of the Rashtriya Janata Dal (RJD) and played a significant role in Bihar politics.

## 45 Option (c) is correct.

## **Explanation**:

• The Quadrilateral Security Dialogue, also known as the Quad, is an informal strategic forum comprising the United States, Japan, India, and Australia.

The idea of the Quad was first proposed by Japanese Prime Minister Shinzo Abe in 2007 as a response to China's growing assertiveness in the Indo-Pacific region.
The Quad is an informal strategic forum that aims to

promote a free, open, and inclusive Indo-Pacific region.
After a gap of almost a decade, the Quad was revived in 2017 with officials from the four countries meeting on the sidelines of the ASEAN Summit in Manila, Philippines.

## **46** Option (a) is correct.

## Explanation:

 Prahlad Singh Patel, the Minister of State (Independent Charge) for Culture and Tourism, represented India's perspective in the Fifth BRICS Culture Ministers Meeting held via video conference on 24<sup>th</sup> September 2020.

• The meeting was attended by the Culture Ministers of all the five BRICS countries, namely Brazil, Russia, India, China, and South Africa, to discuss the cooperation and development of cultural exchanges between the member countries.

## BRICS

• BRICS is a grouping of five major emerging economies - Brazil, Russia, India, China, and South Africa. The term "BRICS" was first coined by Jim O'Neill of Goldman Sachs in 2001.

• The group was formally established in 2006.

• The first BRIC Summit was held in Yekaterinburg, Russia in 2006.

• South Africa is invited to join the group, and the acronym is changed to BRICS. The first BRICS Summit with South Africa was held in Sanya, China.

## **47** Option (d) is correct.

## Explanation:

• The 36<sup>th</sup> ASEAN Summit was initially scheduled to take place in Danang, Vietnam, in April 2020. However, due to the COVID-19 pandemic, the summit was postponed and held virtually on June 26, 2020.

• The summit was chaired by Vietnamese Prime Minister Nguyen Xuan Phuc and attended by the leaders of all the ten member countries.

## **ASEAN (Association of Southeast Asian Nations)**

• The ASEAN (Association of Southeast Asian Nations) is a regional intergovernmental organization that comprises ten Southeast Asian countries, namely Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam.

• On August 8, 1967, The Bangkok Declaration was signed by the founding members of ASEAN - Indonesia, Malaysia, the Philippines, Singapore, and Thailand - in Bangkok, Thailand.

## 48 Option (c) is correct.

**Explanation:** According to the Human Capital Index 2020 report, Singapore has topped the list with a score of 0.88, followed by South Korea (0.84), Japan (0.81), and Hong Kong (0.81). These four East Asian countries have consistently been among the highest-ranked countries in the HCI.

## The Human Capital Index (HCI)

• The Human Capital Index (HCI) measures the knowledge, skills, and health that people accumulate over their lifetimes and seeks to quantify the contribution of health and education to the productivity of countries.

• The HCI report is annually released by the World Bank.

## 49 Option (b) is correct.

## Explanation:

• Operation MAGA, which stands for "Make America Great Again", was a campaign launched by the Trump-Pence campaign in the lead-up to the 2020 US presidential election.

• The campaign was aimed at energizing supporters and getting out the vote for the Republican ticket of Donald Trump and Mike Pence.

#### **50** Option (c) is correct.

**Explanation:** The United Arab Emirates (UAE) is the Arab state that has started its first nuclear power plant. The Barakah nuclear power plant, located in the western region of Abu Dhabi in the UAE.

## **51** Option (a) is correct.

**Explanation:** Egypt was the first Arab state to sign a peace deal with Israel. The peace treaty, known as the Egypt-Israel Peace Treaty, was signed in 1979 in Washington, D.C., and was the first peace agreement between Israel and an Arab state.

## **52** Option (d) is correct.

#### Explanation:

• India assumed the role of Chairman of the International Labour Organization's Governing Body for the period of October 2020 till June 2021.

• This was the first time India had held the chairmanship of the Governing Body, which is the apex executive body of the ILO.

• The Governing Body is responsible for setting the policies and strategies of the ILO and overseeing its activities.

## **53** Option (b) is correct.

#### **Explanation**:

• 'Operation My Saheli' was launched in September 2020 by the Railway Protection Force (RPF) of the Indian Railways.

• The aim of the operation is to boost the security of women passengers in trains and ensure their safe travel. The operation is specifically designed to assist women traveling alone on long-distance trains.

## **54** Option (a) is correct.

## Explanation:

• The Mantra, "Fitness Ki Dose, Aadha Ghanta Roz" (Fitness Dose, Half an Hour Daily), was given by Prime Minister Narendra Modi on the occasion of the first anniversary of the Fit India Movement.

#### **55** Option (c) is correct.

#### **Explanation**:

■ Prime Minister, Narendra Modi released commemorative coin of ₹ 100 denomination on 12 Oct 2020 to celebrate the 100<sup>th</sup> Birth Centenary of Rajmata Vijaya Raje Scindia.

 Mridula Sinha, a writer, wrote a biography of Vijaya Raje Scindia called "Ek Thi Rani Aisi Bhi" in Hindi.

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

#### **Explanation**:

• Kezang D Thongdok, a filmmaker from Arunachal Pradesh, has been honored with the Dada Saheb Phalke Award for 2020 for his short documentary "Chi Lupo".

• It highlights the efforts of a young man who is trying to preserve the local ecosystem by promoting sustainable hunting practices among his community.

• The documentary sheds light on the traditional honeyhunting practice of the Shertukpen community, where "Chi" refers to honey, and "Lipo" means hunters.

## Dadasaheb Phalke Award

• The Dadasaheb Phalke Award is India's highest honor in the field of cinema, and it is presented annually by the

Directorate of Film Festivals at the National Film Awards ceremony.

- The award was established in 1969.
- It is named after the legendary filmmaker Dada Saheb
- Phalke, who is considered the father of Indian cinema.

### **57** Option (b) is correct.

## Explanation:

• HDFC Bank, on June 30, 2020, launched the e-Kisaan Dhan app in India to offer farmers access to a range of agricultural and banking services on their mobile phones.

• The app includes features such as mandi prices, weather forecasts, farming news, seed varieties, and e-pashuhaat to provide value-added services to farmers.

## **58** Option (b) is correct.

## Explanation:

• India launched its first COVID-19 testing facility at the international airport of Delhi on March 23, 2020.

• The testing facility is the first of its kind in India, and is designed to screen passengers who have recently traveled to countries with high COVID-19 infection rates.

• The facility, named the 'COVID-19 Sample Collection Booth', was inaugurated by the Delhi International Airport Limited (DIAL) in collaboration with Genestrings Diagnostic Center.

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

## Explanation:

• On September 10, 2020, a formal induction ceremony was held at the Ambala Air Force Station, where five Rafale fighter aircraft were formally inducted into the Indian Air Force's Golden Arrows squadron.

• The Rafale is a multirole fighter aircraft that has been designed and developed by the French company Dassault Aviation.

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

## Explanation:

• The name of India's first indigenous anti-radiation missile is "Rudram".

• The missile is designed to detect and destroy enemy radars and communication networks from a safe distance.

• The missile has been developed by DRDO's Defence Research and Development Laboratory (DRDL) in Hyderabad, and it has been integrated onto the Sukhoi-30MKI fighter jet by the Hindustan Aeronautics Limited (HAL).

## **61** Option (a) is correct.

Explanation:

• Furrows of ploughed fields have been found in Kalibangan, which is one of the Harappan cities located in the present-day state of Rajasthan, India.

• The archaeological excavations in Kalibangan have revealed a well-planned city with well-defined residential areas, public buildings, and a well-established drainage system.

• The discovery of furrows of ploughed fields in Kalibangan suggests that agriculture was an important occupation of the Harappan people, and they were adept at using sophisticated agricultural techniques.

#### **62** Option (c) is correct.

#### Explanation:

• Triratna or the 'three jewels' are known as the principles of Jainism. These are: right belief, right knowledge, and right conduct.

• Jains seek to attain ultimate liberation, which means escaping the continuous cycle of birth, death, and rebirth, so that the immortal soul lives forever in a state of bliss, through the belief in reincarnation.

• The five great vows (mahavratas) of Jainism are nonviolence, non-attachment to possessions, truthfulness, not stealing, and sexual restraint (with celibacy as the ideal).

• This religion is divided into two major sects, the Digambara (meaning "sky-clad") and the Svetambara (meaning "white-clad").

• Jainism has 24 Tirthankaras, with Rishabhdev as the first and Mahavira as the last one who gave Jainism its present-day form.

• Agamas are the texts that contains the teachings of Mahavira.

#### **63** Option (c) is correct.

**Explanation:** The Fourth Buddhist Council was held during the reign of Kanishka.

#### **Buddhist Council**

• Buddhist Councils are important gatherings of Buddhist leaders and scholars that have been held throughout history to discuss various aspects of Buddhism, such as doctrine, discipline, and organizational structure.

• There were four Buddhist councils held in ancient India:

• **First Buddhist Council:** It was held in Rajgir (modernday Bihar) shortly after the Buddha's death in 483 BCE. It was convened by the Buddha's disciple Mahakasyapa during the reign of King Ajatashatru.

• Second Buddhist Council: It was held in Vaishali (modern-day Bihar) around 100 years after the Buddha's death, in 383 BCE. The council was presided over by Sabakami and the King was Kalashok.

• Third Buddhist Council: It was held in Pataliputra (modern-day Patna) during the reign of Emperor Ashoka around 250 BCE. The council was presided over by Moggaliputta Tissa.

• Fourth Buddhist Council: It was held in Kundalvan, Kashmir during the reign of King Kanishka around 100 CE. The council was presided over by Vasumitra. The Buddhism was divided in Hinyana and Mahayana.

#### **64** Option (d) is correct.

#### **Explanation**:

 Vaisheshika is one of the six major schools of Indian philosophy, and it is known for its theory of atoms (anu).

• According to the Vaisheshika school, the universe is made up of discrete, indivisible particles called atoms, which combine to form larger objects.

• The Vaisheshika school was founded by the sage Kanada, who is believed to have lived around the 6<sup>th</sup> century BCE.

## **65** Option (b) is correct.

#### **Explanation:**

 Balban is associated with implementing the policy of "blood and iron," which involved a ruthless approach towards enemies, the use of swords, strictness, and the shedding of blood. **BPSC** Solved Paper (December 2020)

• He is recognized for reducing the influence of the nobility and elevating the status of the sultanate.

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

## Explanation:

• The Chola system of local self-government was known as the Ur system, which involved a hierarchy of administrative units, from the village level (Ur) to the district level (nadu) and the regional level (valanadu).

• Each administrative unit had its own council of elected representatives, known as the Sabha or Urar, which was responsible for maintaining law and order, managing local affairs, and collecting taxes.

• The Ur system of local self-government was highly decentralized and autonomous.

• The system was also highly democratic, with the Sabhas being composed of members from different social and economic backgrounds, including farmers, merchants, and artisans.

## **67** Option (a) is correct.

#### Explanation:

• Pietra dura is a decorative art technique that involves using cut and fitted, highly polished colored stones to create images or decorative patterns.

## Pietra dura

• Pietra dura originated in ancient Rome but became particularly popular during the Renaissance in Italy, where it was used extensively to decorate churches, palaces, and other buildings.

• It was later adopted by the Mughal emperors in India, who used it to decorate their buildings, including the Taj Mahal.

#### **68** Option (b) is correct.

## Explanation:

• Akbar, the third Mughal emperor, was a great patron of the arts and established several institutions to promote the arts and culture in his empire. One such institution was the Karkhana-i-Rafta, which was established by Akbar to promote and develop the art of painting in his empire.

• The Karkhana-i-Rafta was a workshop or atelier where artists were employed to produce paintings, manuscripts, and other works of art.

• The workshop was located in Fatehpur Sikri, which was the capital of the Mughal empire during Akbar's reign.

#### **69** Option (c) is correct.

#### Explanation:

• The concept of Dual Government was introduced in Bengal by Robert Clive in 1765 and it continued till 1772.

• This system was put in place after the British East India Company acquired the diwani, or revenue collection rights, for Bengal, Bihar, and Orissa following the Battle of Buxar in 1764.

• Under the dual system of governance, the British maintained control over the revenue collection and administrative functions of the state, while the nawabs or local rulers retained their symbolic authority and were responsible for maintaining law and order in their territories.

#### **70** Option (b) is correct.

#### Explanation:

• The Parliament of Religions was a historic event held in Chicago in 1893 as part of the World's Columbian Exposition.

## • It was the first interfaith conference of its kind, bringing together representatives from various religions and spiritual traditions from around the world to promote understanding and dialogue.

• Swami Vivekananda was the most famous participant from India at the Parliament of Religions.

• Vivekananda's speeches at the Parliament of Religions, particularly his address on September 11, 1893, were widely acclaimed and helped to establish him as a leading spiritual figure in India and the West.

## **71** Option (c) is correct.

## **Explanation**:

• The Swaraj Party was established on 1 Jan 1923 by C. R. Das and Motilal Nehru.

• After the Non-Cooperation Movement led by Mahatma Gandhi was called off in 1922, many Indian leaders, including C. R. Das and Motilal Nehru, were disillusioned with the Congress party's decision to not participate in elections under the British government's reforms.

• They felt that the reforms did not go far enough in granting self-rule to India.

• To challenge the British government's authority and push for greater self-rule, Das and Nehru established the Swaraj Party in 1923.

• The party aimed to contest elections to the legislative councils and work towards achieving full self-government for India.

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

#### Explanation:

• The famous play "Neel Darpan" was written by Dinabandhu Mitra.

• "Neel Darpan" is a Bengali play that portrays the exploitation and oppression of indigo farmers by the British colonialists in India during the 19<sup>th</sup> century.

• The play was first performed in 1860 and caused a great stir in society, drawing attention to the plight of the indigo farmers who were forced to cultivate indigo and give a large portion of their harvest to the British planters as rent.

#### **73** Option (a) is correct.

#### **Explanation:**

• The famous Battle of Wandiwash in 1760 was fought by the British against the French during the third Carnatic war.

• The Battle of Wandiwash was a decisive battle in the Seven Years' War, fought between the British East India Company and the French East India Company in southern India.

• The French, under the leadership of General Thomas Arthur, Comte de Lally, had invaded the Britishcontrolled territory of Carnatic and had gained several victories against the British forces.

• However, in 1760, the British forces, led by Sir Eyre Coote, defeated the French at the Battle of Wandiwash.

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

#### **Explanation**:

• The Indian Councils Act of 1909 introduced the separate electorate system in India.

• The Act was also known as the Morley-Minto Reforms, named after the then Secretary of State for India, John Morley and the then Viceroy of India, Lord Minto.

• It also introduced the concept of separate electorates for Muslims, Sikhs, Christians, and Anglo-Indians, which meant that members of these communities would only vote for candidates of their own community.

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

## Explanation:

• The Kol Mutiny of 1831, also known as the Kol Rebellion, took place in the Singhbhum region of present-day Jharkhand, India.

• The rebellion was led by a tribal leader named Buddho Bhagat, who fought against the British East India Company's efforts to expand their control over the region and impose taxes on the indigenous people.

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

**Explanation:** The 1857 Revolt, also known as the First War of Indian Independence or the Sepoy Mutiny, was a major uprising against British colonial rule in India.

• Kunwar Singh, also known as Veer Kunwar Singh, was one of the prominent leaders of the rebellion in Bihar.

• He was a zamindar and a member of the royal family of Jagdishpur. At the age of 80, Kunwar Singh led his troops into battle against the British and played a significant role in the rebellion in Bihar and neighbouring areas.

## 77 Option (d) is correct.

Explanation:

• Raj Kumar Shukla drew Gandhiji's attention to the plight of indigo peasants in Champaran.

• Raj Kumar Shukla was a farmer from Champaran district in Bihar, India. He met Gandhiji in 1917 during one of his visits to Lucknow and requested him to come to Champaran to investigate the situation of the indigo farmers.

• At that time, the British colonial government had imposed a system of forced cultivation of indigo on farmers in Champaran, which had led to exploitation and abuse of farmers by British planters.

• The farmers were required to grow indigo on a portion (3/20) of their land, without receiving adequate compensation or any say in the pricing of their crops.

• Gandhiji, on Shukla's request, went to Champaran and initiated a campaign to protest against the forced cultivation of indigo.

## **78** Option (e) is correct.

## Explanation:

• The first capital of ancient Mahajanapada Magadh was Girivraj, which is now known as Rajgir.

• Girivraj was the capital of the Magadh empire during the reign of King Bimbisara, who ruled from approximately 543 BCE to 491 BCE.

• It was later succeeded by Pataliputra as the capital of Magadh during the reign of King Ajatashatru, who ruled from approximately 491 BCE to 461 BCE.

• Rajgir is located in the Nalanda district of Bihar and is situated at the base of the Vulture's Peak mountain (Griddhkut Parvat).

## **79** Option (c) is correct.

#### **Explanation** :

• Swami Sahajananda Saraswati was a prominent social and political leader from Bihar, India, who is associated with the peasant movement in Bihar.

• He was born in 1889 in the Saharsa district of Bihar and was initially associated with the Arya Samaj movement. However, he later became interested in the issues faced by farmers and peasants in Bihar and started working towards their upliftment.

■ In 1921, he founded the Bihar Provincial Kisan Sabha.

• Swami Sahajananda also played a key role in organizing the farmers' and peasants' movement against the British colonial government and their oppressive policies.

## **80** Option (a) is correct.

## Explanation:

• The Champaran Satyagraha, launched by Mahatma Gandhi in 1917, is recognized as India's first civil disobedience movement.

• It was a protest by farmers in Bihar against the oppressive Tinkathiya system enforced by the British colonial authorities.

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

## Explanation:

• The largest island of Japan in terms of geographical area is Honshu.

• Honshu is the main island of Japan and is located in the northern part of the Pacific Ocean.

• The capital city of Japan, Tokyo, is located on Honshu island.

## 82 Option (a) is correct.

## **Explanation**:

• Greenland is a part of Denmark.

• It is an autonomous territory within the Kingdom of Denmark, located between the Arctic and Atlantic oceans.

• While it is not a sovereign state, it has its own government and parliament and manages most of its own affairs, except for defense and foreign policy, which are handled by Denmark.

#### **83** Option (d) is correct.

#### **Explanation**:

• As of December 2018, the country with the largest Indian population in the world is the United States of America (USA), with an estimated population of over 4 million people of Indian origin.

• The Indian community in the USA has grown significantly over the past few decades, with many Indians migrating for education, work opportunities, and family reunification.

• Other countries with significant Indian populations include the United Arab Emirates, Malaysia, and the United Kingdom.

## **84** Option (c) is correct.

#### **Explanation**:

• China accounted for the highest annual gold output in 2019, producing 404 tonnes, which was around 11 percent of the total global production.

• According to the World Gold Council, India holds 618.2 tonnes of gold, which is 6.9 percent of the its total foreign reserves.

• The United States has the largest holding of gold with 8133.5 tonnes, followed by Germany with 3366 tonnes, and the International Monetary Fund (IMF) with 2814 tonnes.

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

Explanation:

• Africa has the highest number of countries among continents, with a total of 54.

• It is surrounded by various bodies of water including the Mediterranean Sea in the north, the Atlantic Ocean in the west, the Indian Ocean in the southeast, and the Suez Canal, the Red Sea, and the Arabian Sea in the northeast.

• It is the only continent through which the Tropic of Cancer, the Equator, and the Tropic of Capricorn pass.

• The Sahara desert, the largest hot desert in the world, is located in Africa, and the world's longest river, the Nile, flows through the continent.

## 86 Option (c) is correct.

**Explanation:** As per the 2011 Census, Mizoram and Lakshadweep have the highest percentage of tribal population to its total population, with 94.4% and 94.8%, respectively.

• Uttar Pradesh has the minimum ratio of Scheduled Tribes, with only 0.6%.

• According to the 2011 census, the total population of tribes in India makes up 8.6% of the country's total population, with Bhil being the largest tribal group in India.

• In terms of the number of tribes, Madhya Pradesh has the largest number followed by Odisha.

#### **87** Option (d) is correct.

**Explanation:** The coffee growing area that is not in Karnataka is Pulneys.

• Chikmagalur, Coorg, and Baba Budangiri are all regions in Karnataka known for their coffee production.

• The Pulneys (also known as Palani Hills) are a mountain range in Tamil Nadu, which is a major coffeeproducing region.

## **88** Option (b) is correct.

#### Explanation:

• Kutch district, located in the state of Gujarat, is the largest district in India in terms of geographical area. It covers an area of 45,652 square kilometers.

• Leh district, located in the union territory of Ladakh, covers an area of 45,110 square kilometers and is the second-largest district in India.

• Jaisalmer, located in the state of Rajasthan, covers an area of 38,401 square kilometers and is the third-largest district in India.

• Barmer, also located in the state of Rajasthan, covers an area of 28,387 square kilometers and is the fifth-largest district in India.

## **89** Option (c) is correct.

**Explanation:** According to recent data in 2020, Maharashtra has the highest number of wildlife sanctuaries among Indian states, with a total of 49.

■ Tamil Nadu follows with 31 sanctuaries, while Karnataka has 35 and Madhya Pradesh has 24.

• There are 567 existing wildlife sanctuaries in India covering an area of 122,564.86 km<sup>2</sup>, which is 3.73% of the geographical area of the country (National Wildlife Database, Jan. 2023).

#### **90** Option (e) is correct.

**Explanation:** Among the rivers flowing in Bihar, Bagmati, Kamla, Kosi and Gandak are all south flowing rivers.

**Bagmati:** It originates in the Mahabharat Range in Nepal and flows southwards into Bihar before finally joining the Ganges river.

**Kamla:** The Kamla river flows southwards into Bihar before joining the Ganges river.

**Kosi:** It originates in the Mahabharat Range in Nepal and flows southwards into Bihar before finally joining the Ganges river.

**Gandak:** It originates in Nepal and flows southwards into Bihar before finally joining the Ganges river.

## **91** Option (d) is correct.

**Explanation:** Atal Tunnel is a 9.02 km long tunnel that connects Manali in Himachal Pradesh to Leh in Ladakh.

• The Atal Tunnel is located across the Pir Panjal range of the Himalayas, which separates the Indian subcontinent from Central Asia.

## **92** Option (c) is correct.

**Explanation:** India's 13<sup>th</sup> major port is going to be set up in the state of Maharashtra.

• The proposed port, named Vadhavan Port, will be located in the Palghar district of Maharashtra and is expected to be one of the biggest ports in the country, with a capacity to handle 90 million tonnes of cargo annually.

## **93** Option (b) is correct.

#### **Explanation**:

• As of 30 November 2020, the installed solar capacity in India was 36.9 GW.

• Karnataka is the leading state in India with an installed capacity exceeding 5,000 MW by the end of the financial year 2017-18.

• As of 31 August 2020, the installed photovoltaic capacity in Andhra Pradesh was 3,531 MW.

 Telangana has a solar power generation capacity of 3400 MW, trailing behind Karnataka.

## **94** Option (a) is correct.

Explanation: Limestone is a major mineral found in the Kaimur district of Bihar. The Kaimur hills range through the districts of Rohtas and Kaimur. Limestone deposits of various grades occur in several districts of Bihar, including Kaimur, Rohtas, Buxar, Gaya, and Aurangabad.
Mica is not found in Bhagalpur district or any other district of Bihar.

• Quartzite is not found in Madhubani district or any other district of Bihar.

• Lead-zinc is not found in Gaya district or any other district of Bihar.

#### **95** Option (d) is correct.

#### **Explanation**:

• Oil Refinery - Barauni: Barauni Refinery located in Begusarai district of Bihar is one of the largest oil refineries in India.

• **Cement - Banjari:** Banjari is a place in Rohtas district of Bihar which is known for its cement industry.

• **Fertilizer - Bhaurahi:** Bhaurahi is a prominent centre for the fertilizer industry, it is located in the Chandauli district of Uttar Pradesh.

• Wagon and Engineering - Bhagalpur: There is no such wagon and engineering industry located in Bhagalpur district of Bihar.

#### **96** Option (c) is correct.

**Explanation:** The Piedmont Swamp Soil is a type of soil that is found in the foothills or the lower slopes of a mountain range. It is characterized by a high level of organic matter, poor drainage, and a thick layer of humus.

• Out of the given districts of Bihar, West Champaran is the only district where Piedmont Swamp Soil is found. West Champaran is a district located in the western part of Bihar, bordering Nepal. It is known for its fertile land and agriculture.

## **97** Option (d) is correct.

**Explanation:** The river Ganga does not flow through the Kosi (Saharsa, Madhepura, Supaul districts) and Magadh [Aurangabad, Gaya, Nawada, Arwal and Jehanabad districts] division.

The number of districts situated on the bank of Ganga river in Bihar is 12.

The districts are Buxar, Bhojpur, Saran, Patna, Vaishali, Samastipur, Begusarai, Munger, Khagaria, Katihar, Bhagalpur and Lakhisarai.

## **98** Option (b) is correct.

Explanation:

• Santhal Tribe constitute more than three-fourth of The tribal population of Jamui, Kishanganj, Banka, Madhepura, and Araria.

• Munda tribe has its highest concentration in the Katihar district and not in Jamui.

• In Supaul district, Oraon has the highest proportion (70%) of the total ST population.

• Kharwar has its maximum concentration in the Bhagalpur district.

## **99** Option (e) is correct.

**Note:** According to BPSC, answer is (a), but it should be (e).

#### Explanation:

• As per the India State of Forest Report 2019, the total forest area of Bihar State is 7,305.99 square kilometers, which is 7.76% of the total geographical area of the state (94,163 square kilometers).

• As per the India State of Forest Report 2021, the total forest area of Bihar State is 7,381 square kilometers, which is 7.84% of the total geographical area of the state (94,163 square kilometers) as of 2020.

## 100 Option (c) is correct.

**Explanation:** The concept of a national park involves reserving an area for the protection and preservation of wildlife and biodiversity, where activities such as development, forestry, poaching, hunting, and cultivation are prohibited.

• In the state of Bihar, there is only one national park and 12 wildlife sanctuaries.

• It is named Valmiki National Park, which was established in 1990 and covers an area of 880 sq. km.

#### 101 Option (c) is correct.

**Explanation:** Tata Projects Limited won the bid to construct the new Parliament building in 2020.

■ The building was completed at a cost of ₹ 836 crore and has an area of 64,500 square metres.

The Lok Sabha and Rajya Sabha halls in the new building will be equipped with 888 and 384 seats respectively, to accommodate an expanded Parliament once the freeze on its expansion lifts in 2026.

## **102** Option (a) is correct.

#### **Explanation:**

■ The establishment and functions of the Election Commission of India are governed by Article 324 of the Indian Constitution.

Article 324 empowers the President of India to appoint the Election Commission of India, which is responsible for conducting free and fair elections to the Parliament, state legislative assemblies, and the offices of the President and Vice-President of India.

 The Election Commission of India consists of a Chief Election Commissioner and two Election Commissioners, all of whom are appointed by the President of India.

#### **103** Option (c) is correct.

Explanation: Rekha Sharma assumed the charge of Chairperson, National Commission for Women on August 7, 2018.

She is still serving as the Chairperson of the National Commission for Women as of March 2023.

#### National Commission for Women

 The National Commission for Women was established as a statutory body in January 1992 under the National Commission for Women Act of 1990.

#### 104 Option (a) is correct.

Explanation: The Rule of Law is a legal principle that establishes the supremacy of the law and requires that all individuals, including those in positions of authority, are subject to the law.

• It means that everyone is equal before the law and that no one is above it.

■ It also ensures that there is a fair and impartial judiciary to interpret and apply the law equally to all individuals without any discrimination or bias.

Therefore, 'one act for all' means that the same law applies to everyone, and 'one judiciary' means that everyone is subject to the same judicial system.

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

#### **Explanation**:

 The Eleventh Schedule of the Constitution gives a list of 29 subjects in respect of which; functions, finances and functionaries may be devolved by State to Panchayati Raj Institutions.

According to Article 243G of the Constitution, State Legislatures may by law endow Panchayats with such powers and authority as may be necessary to enable them to function as institutions of self-government.

## **106** Option (b) is correct.

#### **Explanation**:

 The Citizenship (Amendment) Act, 2019 was passed by the Indian Parliament on 11th December 2019.

 The act amended the Citizenship Act of 1955, and it provided a path to Indian citizenship for undocumented immigrants belonging to six religious communities from Pakistan, Afghanistan, and Bangladesh. These communities include Hindus, Sikhs, Buddhists, Jains, Parsis, and Christians.

#### 107 Option (d) is correct.

#### **Explanation**:

The Amendment phase towards strengthening the Panchayat Raj Institutions began with the introduction of the 64<sup>th</sup> Amendment Bill in 1989 by Rajiv Gandhi.

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■ However, the bill did not pass in the Rajya Sabha. Later, in 1990, the Constitution (74th Amendment) Bill was introduced for the Panchayat Raj Institutions and municipalities, but it was not discussed in Parliament.

■ Subsequently, in December 1992, both the 73<sup>rd</sup> and 74<sup>th</sup> Constitutional Amendments were passed by Parliament.

■ The Constitution (73<sup>rd</sup> Amendment) Act, 1992 came into force on April 24, 1993, and the Constitution (74th Amendment) Act, 1992 on June 1, 1993.

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

Explanation: In 1632, the Dutch East India Company established a factory (trading post) in Patna, Bihar. The Dutch East India Company

■ The Dutch East India Company, also known as the VOC (Vereenigde Oost-Indische Compagnie), established a trading post in the Indian subcontinent in 1605, with the opening of a factory in Masulipatnam (present-day Machilipatnam) on the eastern coast of India.

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

#### **Explanation**:

 "To instil non-confidence among local communities" is not a characteristic of decentralization.

 Decentralization refers to the transfer of power, responsibility, and decision-making from central authorities to local or regional authorities.

It is a process of sharing authority and responsibility for decision-making with lower levels of government or community organizations.

The key characteristics of decentralization are:

Autonomy: Local or regional authorities have a certain level of independence and decision-making power.

• People's participation: Local communities are involved in decision-making processes, which allows them to have a say in issues that directly affect them.

• To empower local communities: Decentralization aims to empower local communities by giving them more responsibility and control over their own affairs.

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

**Explanation**:

■ "The Protection of Civil Rights Act, 1955" is not a landmark in the development of the Constitution during the British Rule.

■ The Protection of Civil Rights Act, 1955, is a post-Independence legislation enacted by the Indian government to provide protection to the civil rights of its citizens.

This act aimed to prevent discrimination against people on the basis of their caste, religion, race, or sex.

The Regulating Act, 1773 was the first major legislative intervention by the British Parliament in the governance of British India. It established the Supreme Court of Calcutta and the office of the Governor-General of Bengal.

■ The Charter Act, 1833 abolished the East India Company's monopoly on trade with China and established the Governor-General of India as the representative of the British Crown in India.

■ The Government of India Act, 1919 introduced a system of diarchy in the provinces, whereby some powers were transferred to elected Indian ministers while others remained with the British-appointed governor.

## **III** Option (d) is correct.

#### Explanation:

• The objective of food management in India is to ensure food security in the country.

The primary objectives of food management are:

**A.** Procurement of food grains from farmers at a minimum support price (MSP).

**B.** Distribution of food grains to ensure affordable food for the population.

**C.** Maintenance of food grain buffer stock to ensure food security during times of shortage.

**D.** Operation of a public distribution system (PDS) to provide food grains to the poor and vulnerable sections of the society at subsidized rates.

Therefore, Export of food grains is not an objective of food management in India.

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

#### **Explanation**:

• Revenue deficit in India implies that the Indian Government needs to borrow in order to finance its expenses which do not create capital assets.

• Revenue deficit occurs when the government's total revenue is less than its total expenditure excluding capital expenditure (expenditure that creates capital assets).

• In other words, the government is spending more money on its routine expenses than it is earning from taxes and other sources of revenue.

• To finance the revenue deficit, the government needs to borrow from various sources such as issuing bonds or securities, borrowing from the Reserve Bank of India, or seeking loans from international financial institutions.

• The borrowed funds are used to meet the government's operational expenses such as salaries, subsidies, and interest payments on previous borrowings.

## **113** Option (a) is correct.

## Explanation:

• The economic ties between India and the USA are increasing as the USA remained India's top trading partner for the second consecutive fiscal year in 2019-20.

• In this period, the bilateral trade between the two countries was USD 88.75 billion as compared to USD 87.96 billion in 2018-19.

• India's top trading partner shifted from China to the USA in 2018-19. Moreover, India has a trade surplus with the USA, which is one of the few countries in this category.

#### **114** Option (c) is correct.

#### **Explanation**:

• The Road Infrastructure is related to the Bharatmala Project in India.

• The Bharatmala Project is a centrally sponsored and funded road and highways project that aims to improve the connectivity and efficiency of the National Highways across India. The Bharatmala Project was approved by the Indian government in October 2017.

## 115 Option (c) is correct.

#### Explanation:

• The Central Statistics Office (CSO) releases the Index of Industrial Production (IIP) to measure the industrial performance in India.

• The CSO is a part of the Ministry of Statistics and Programme Implementation (MOSPI) and is responsible for compiling and publishing statistical data related to various sectors of the Indian economy. • The IIP is a monthly index that measures the growth rate of different sectors of the Indian industry, including manufacturing, mining, and electricity, based on their physical output.

• The IIP is considered an important indicator of the overall health of the Indian economy.

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

#### **Explanation**:

• According to the Ease of Doing Business Report, 2020, India improved its rank from 77<sup>th</sup> position in the previous year to 63<sup>rd</sup> position.

#### The Ease of Doing Business Report

• The Ease of Doing Business Report is an annual publication of the World Bank Group that evaluates the regulations that enhance or constrain business activity in various countries.

• It ranks the countries based on their ease of doing business index score, which is a composite index calculated as an average of ten indicators.

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

Explanation:

• The credit target for institutional agricultural credit flow in the Union Budget of India for 2020-21 is 15 lakh crore rupees.

• The aim of this target is to improve the availability of credit to farmers and enhance their income.

• The government has also proposed to cover 2.5 crore farmers under the Kisan Credit Card scheme and allocated 2.83 lakh crore rupees for agriculture and rural development in the Union Budget of 2020-21.

## **118** Option (d) is correct.

#### Explanation:

• The objective of PM-KUSUM scheme is to remove farmers' dependence on diesel and kerosene and to link pump sets to solar energy.

## **PM-KUSUM** scheme

• The scheme was launched in 2019 with the aim of promoting the use of renewable energy and reducing the dependence of farmers on traditional sources of energy like diesel and kerosene for irrigation.

• Under the scheme, farmers are provided with solarpowered water pumps, which can not only help in reducing their energy bills but also help in preserving the environment.

• The scheme also aims to increase farmers' income by generating electricity from solar panels installed on barren lands, which can be sold to the grid.

#### **119** Option (b) is correct.

#### Explanation:

• As per the Economic Survey of 2019-20, India being the fifth largest economy, should ideally have six banks in the top 100 global list, while at least eight banks would be required for a country with a \$5-trillion economy.

■ In 2020, the Chief Economic Adviser, K. V. Subramanian, stated that India needs more banks of global size to help the country achieve its goal of becoming a \$5 trillion economy by 2024-25.

• The State Bank of India (SBI) is the only bank from India that appears in the global top 100 list, at the 55<sup>th</sup> position.

• In contrast, China has 18 banks and the US has 12 banks in the list.

## 120 Option (d) is correct.

## **Explanation**:

• The NIRVIK scheme announced in the Budget for 2020-21 is aimed at providing enhanced insurance cover and reducing the premium for small exporters in India.

• It is intended to support and promote the growth of the export sector in India by providing insurance coverage to exporters for their overseas shipments, which will help them in accessing credit from banks.

• The scheme will also cover the pre- and post-shipment period of exporters.

## **121** Option (a) is correct.

## **Explanation**:

• The Comprehensive Financial Management System (CFMS) is an online platform introduced by the Bihar Government on 1<sup>st</sup> April, 2019 to make all financial activities in the state online and paperless.

• The system aims to ensure transparency and accountability in financial transactions and improve the efficiency of financial management in the state.

## 122 Option (a) is correct.

**Note:** According to BPSC, answer is (a), but it should be (b).

## Explanation:

• The Krishi Karman Award is given by the Government of India to the States and Union Territories for their performance in food grain production.

• The award recognizes the efforts made by the States in the production of food grains, which helps in increasing the overall food security of the country.

• In 2020, the Government of India conferred the Krishi Karman Award to Bihar State for its outstanding performance in food grain production during the year 2018-19.

• Bihar achieved a record production of 303.77 lakh tonnes of food grains during the year, which was a significant improvement from the 287.42 lakh tonnes produced in the previous year.

## Krishi Karman Award

• The Krishi Karman Awards, which were established in 2010-11, are granted to the Indian states with the highest levels of food grain production.

• The Ministry of Agriculture of the Government of India is responsible for administering the award selection procedure.

## 123 Option (c) is correct.

**Explanation:** The Bihar Government launched the 'Satat Jivikoparjan Yojana' in August 2018 with the aim of providing sustainable income-generating assets to extremely poor households.

## Satat Jivikoparjan Yojana

• The objective of this scheme is to provide employment in rural areas through local bodies.

• The scheme aims to create sustainable livelihood opportunities for the rural population of Bihar by providing them with employment opportunities in various sectors such as agriculture, horticulture, fisheries, animal husbandry, and small-scale industries.

■ The beneficiaries of the scheme are eligible for a monthly allowance of ₹ 1,000 for a period of six months to support them during their initial period of employment.

## 124 Option (d) is correct.

Explanation:

• The Seven Resolves (Saat Nischay) is a development programme launched by the Bihar government in 2015, aimed at improving the quality of life of the people of Bihar.

• The Seven Resolves are:

A. To provide electricity to all households in Bihar

**B.** To provide piped drinking water to every household in Bihar

C. To construct toilets in every household in Bihar

D. To build roads in every rural locality in Bihar

**E.** To increase irrigation facilities and agricultural productivity in Bihar

**F.** To provide skill development training to youth for employment

**G.** To provide opportunities for higher education and skill development to girls and women in Bihar

## 125 Option (d) is correct.

## Explanation:

■ Between 2015-16 and 2020-21, the Gross State Domestic Product (GSDP) of Bihar grew at a CAGR of 13.17%.

■ During the same period, Bihar's per capita net state domestic product (NSDP) witnessed strong growth and grew at a CAGR of 13.41% (in ₹) at current prices.

■ In 2018-2019, Bihar's per capita NSDP was ₹ 30,617, while the country's Net Domestic Product was ₹ 92,565.

■ This indicates that Bihar's per capita Net State Domestic Product at constant prices was 33% of the national average in 2018-19.

## **126** Option (a) is correct.

Explanation:

• Gandhiji had studied at Samaldas College in Bhavnagar, where he chose to attend due to its more affordable cost compared to colleges in Bombay.

• However, Gandhi struggled with his studies and returned home after completing only one term.

• Later, he decided to pursue a different course of study and opted to study Law in England, where he enrolled at University College London (UCL) and successfully completed his degree after three years.

## **127** Option (e) is correct.

## Explanation:

■ Nana Saheb, Begum Hazrat Mahal, Maulavi Ahmadullah, and Begum Zeenat Mahal all have played active roles in the Revolt of 1857, also known as the First War of Independence.

• **Nana Saheb:** He led the rebellion in Kanpur and was considered the leader of the rebels in Central India.

**Begum Hazrat Mahal:** She was the wife of the exiled Nawab of Awadh, Wajid Ali Shah, and was a prominent leader of the revolt in Lucknow. She organized and led the defense of Lucknow against the British and was known for her bravery and leadership skills.

• **Maulavi Ahmadullah:** He was a Muslim cleric who played an important role in the rebellion in the Awadh region.

**Begum Zeenat Mahal:** She was the wife of the last Mughal Emperor, Bahadur Shah Zafar, and played a significant role in the rebellion in Delhi.

#### **128** Option (d) is correct.

#### **Explanation**:

• Jawaharlal Nehru, the first Prime Minister of India, made the statement "We were provided with a car with all brakes and no engine" about the Government of India Act of 1935.

#### Government of India Act of 1935:

• The Government of India Act 1935 was a British law that provided for the establishment of a federation of provinces and princely states in British India.

• The Act was enacted on 4<sup>th</sup> August 1935 and it came into force on 1<sup>st</sup> April 1937.

• The Act gave the British government control over defence, foreign affairs and communication, while the Indian government would have control over all other matters.

• The Act also established the Reserve Bank of India (RBI), which became the central bank of India.

#### 129 Option (c) is correct.

#### **Explanation** :

• The Dandi March, also known as the Salt March, was a non-violent civil disobedience movement led by Mahatma Gandhi in 1930 to protest against the British salt monopoly in India.

• On March 12, 1930, Gandhi set out from his ashram in Sabarmati near Ahmedabad with a group of 78 followers on a 240-mile journey to the coastal town of Dandi in Gujarat. During the march, Gandhi addressed crowds of supporters and urged them to join the movement against British rule.

• On April 6, after 24 days of walking, Gandhi and his followers reached Dandi and made salt by evaporating seawater. This act of defiance sparked a nationwide movement against the salt laws, and people all over India began to make their own salt.

## **130** Option (e) is correct.

#### Explanation :

• "Sarfaroshi Ki Tamanna" is a patriotic poem written in Urdu. The poem pays tribute to the young freedom fighters who participated in India's independence movement.

• The poem was written by Bismil Azimabadi in 1921, in response to the Jallianwala Bagh massacre and other injustices committed by the British colonialists.

• It was first published in the journal "Sabah", which was based in Delhi.

#### **131** Option (c) is correct.

#### Explanation:

• The Swadeshi Movement was started as a reaction to the Partition of Bengal in 1905 by the British India Government.

• The Bengal province was divided into two parts: East Bengal (present-day Bangladesh) and West Bengal (present-day Indian state of West Bengal). This decision was made by the British government to weaken the growing Indian nationalist movement by dividing Hindus and Muslims, who had previously worked together to fight against British rule.

• In response to the partition, Indian nationalists launched the Swadeshi Movement in 1905. The word "Swadeshi" means "of one's own country".

• The movement aimed to boycott British goods and promote Indian-made goods instead.

## 132 Option (b) is correct.

**Explanation**:

• Bhulabhai Desai had appeared for the INA (Indian National Army) trials at Delhi in 1945-46.

• Bhulabhai Desai was a renowned lawyer and a member of the Indian National Congress. He was one of the defense lawyers for the INA soldiers who were charged with treason by the British government.

• Desai's role in the INA trials was significant, as his arguments and cross-examination of the prosecution witnesses played a crucial role in establishing the innocence of the INA soldiers.

• His efforts, along with other defense lawyers, led to a widespread public outcry against the British government and their attempts to suppress the Indian independence movement.

## **133** Option (c) is correct.

#### Explanation:

• Madam Cama unfurled India's tricolour flag of freedom in Stuttgart, Germany.

• Madam Cama, also known as Bhikaiji Cama, was a prominent figure in the Indian independence movement.

• She was born in Bombay (now Mumbai) and moved to Europe in 1902. She was a member of the Indian National Congress.

• In 1907, Madam Cama designed a flag with green, saffron, and red stripes, which came to be known as the Indian tricolour. She unfurled this flag at the International Socialist Conference in Stuttgart, Germany, in 1907, to draw the attention of the international community towards India's struggle for freedom.

## 134 Option (b) is correct.

## Explanation:

• C. R. Das was a prominent Indian politician, lawyer, and founder-leader of the Swaraj Party in Bengal during the British Raj. He was given the title "Deshbandhu" (friend of the nation) for his services to the country.

• Vinoba Bhave was an Indian advocate of non-violence and human rights, who is best known for his Bhoodan (land gift) movement. He was the first individual Satyagrahi in India, as he volunteered to take the place of Gandhi as the leader of the movement when Gandhi was arrested.

• William Wedderburn was a Scottish-born Indian civil servant, political activist, and a member of the Indian National Congress. He was not the Congress President in 1907, but he did play an important role in the Indian independence movement.

• Shyamji Krishna Varma was an Indian revolutionary, lawyer, and scholar who founded India House in London in 1905, not in Paris.

#### 135 Option (a) is correct.

#### Explanation:

• On 26<sup>th</sup> January 1930, the Indian National Congress declared 'Purna Swaraj' or complete independence from British rule as its goal, during its Lahore session.

• The declaration included a pledge to use civil disobedience as a means to achieve this goal. The day was chosen as it marked the 21<sup>st</sup> anniversary of the adoption of Indian National Congress's constitution in 1909, and was celebrated as Independence Day until India gained actual independence on 15<sup>th</sup> August 1947.

## 136 Option (b) is correct.

## **Explanation**:

• Prior to 1912, Bihar was a part of the Bengal Presidency during the British colonial rule in India. On 22 March 1912, the British colonial administration created the province of Bihar which included modern day Bihar, Odisha, and Jharkhand by separating it from the Bengal province.

• On 1 April 1936, the British administration separated Bihar from Orissa and made it a separate province.

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

## Explanation:

The tinkathia system was the prevalent method of indigo cultivation in Champaran, wherein farmers were obligated to cultivate three kathas peribeegha of their land with indigo, which amounted to  $\frac{1}{20}$  of their landholding (1 beegha = 20 kathas).

• Additionally, the exploitation of farmers by the British worsened the situation. The Champaran Satyagraha of 1917, led by Gandhi, marked the first Satyagraha movement in India. The farmers who were forced to grow indigo for meager payment initiated the protest.

## **138** Option (a) is correct.

#### **Explanation**:

• Shri Krishna Singh was the first Chief Minister of Bihar after India gained independence from British rule in 1947.

He served as the Chief Minister from 1946 to 1961.

 Prior to his tenure as the Chief Minister, he was a prominent leader of the Indian National Congress and played an important role in India's freedom struggle.

• He also served as the first Chief Minister of the state of Bihar after it was carved out of the British-administered province of Bengal in 1936.

• He is remembered as one of the most important political leaders in the history of Bihar.

## 139 Option (a) is correct.

#### **Explanation**:

• The first Congress Session in Bihar was held at Bankipore, Patna between 26-28 December 1912.

• The session was presided over by Raghunath Narasinha Mudholkar (R. N. Madholkar).

- It was the 27<sup>th</sup> session of the Indian National Congress.
  The second Congress Session in Bihar was held at
- Gaya between 26-31 December 1922.

The session was presided over by Deshbandhu Chitaranjan Das (C. R. Das).

- It was the 37<sup>th</sup> session of the Indian National Congress.
- The third Congress Session in Bihar was held at Ramgarh (Present day : situated in Jharkhand) between 19-20 March 1940.

• The session was presided over by Maulana Abul Kalam Azad.

■ It was the 53<sup>rd</sup> session of the Indian National Congress.

• There were total 54 sessions of the congress before Independence.

## 140 Option (b) is correct.

## Explanation:

 Jayprakash Narayan was popularly known as Lok Nayak (People's Leader).

## Jayprakash Narayan

He was born in 1902 in Sitabdiara, Bihar.

• He was influenced by Marxist ideas during his stay in the USA and also embraced Gandhian ideology.

## BPSC Solved Paper (December 2020)

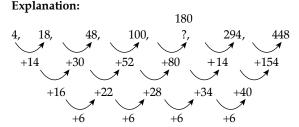
- In 1929, he joined the Indian National Congress.
- In 1934, he founded the Congress Socialist Party, along with other members such as Acharya Narendra Deva, Ram Manohar Lohia, Minoo Masani, Achyut Patvardhan, and Ashok Mehta.

• Later, he left the Congress Party and initiated an anti-Congress Campaign, ultimately forming the Praja Socialist Party in 1952.

In recognition of his "invaluable contribution to the freedom struggle and upliftment of the poor and downtrodden", he was posthumously conferred with India's highest civilian award, the Bharat Ratna, in 1999.
In later years, he played a dynamic role in the formation of the Janata Party, around whom a young socialist movement coalesced, which eventually led to

## India's first non-Congress government in 1977. **Option (c) is correct.**

## Emlenetien



142 Option (b) is correct.

$${}^{2n}C_3: {}^{n}C_2 = 44:3$$

$$\Rightarrow \frac{{}^{2n}C_3}{{}^{n}C_2} = \frac{44}{3}$$

$$\Rightarrow \left(\frac{2n!}{3!(2n-3)!}\right) \times \left(\frac{2!(n-2)!}{n!}\right) = \frac{44}{3}$$

$$\Rightarrow \frac{(2n)(2n-1)(2n-2)(2n-3)\cdots 1}{3!(2n-3)!} \times \frac{2!(n-2)!}{n(n-1)(n-2)\cdots 1} = \frac{44}{3}$$

$$\Rightarrow \frac{2n(2n-1)(2n-2)}{3!} \times \frac{2!}{n(n-1)} = \frac{44}{3}$$

$$\Rightarrow \frac{2(n)(2n-1)2(n-1)}{6} \times \frac{2}{n(n-1)} = \frac{49}{3}$$

$$\Rightarrow \frac{4(2n-1)}{3} = \frac{44}{3}$$

$$\Rightarrow 4(2n-1) = 44 \Rightarrow 2n-1 = 11 \Rightarrow 2n = 12 \Rightarrow n = 6$$

## 143 Option (c) is correct.

Explanation: Given, Avg. of *m* number is  $n^2$  $n^2 = \frac{\text{Sum of numbers}}{n^2}$ 

 $\therefore$  Sum of numbers =  $mn^2$ 

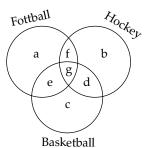
Again, Given,

- Avg. of *n* number is  $m^2$
- $m^2 = \frac{\text{Sum of numbers}}{1}$
- n
- $\therefore$  Sum of numbers =  $nm^2$  $mn^2 + nm^2$
- $\therefore$  Avg. of (m + n) numbers  $= \frac{mn}{m}$

$$=\frac{m+n}{(m+m)}=mn$$

1

## **144** Option (a) is correct. Explanation:



A/q, No. of player in Basketball team  
= 
$$c + e + g + d = 21$$
 (i)  
No. of player in Hockey team  
=  $b + d + f + g = 26$  (ii)  
No. of player in Football team  
=  $a + e + f + g = 29$  (iii)  
Football + Hockey + Basket ball  
=  $d + g = 14$  (iv)  
Football + Basketball  
=  $e + g = 12$  (v)  
Hockey + Football

= g + f = 15(vi) Football + Hockey + Basketball = g = 8(vii) Only Football

$$= a + e + f + g - (g + f) - (e + g - g)$$
  
= 29 - 15 -(12 - 8) = 10

#### 145 Option (b) is correct. **Explanation**:

Suppose,

Mohan's work in 25 days = x unit  $\therefore$  Mohan's efficiency =  $\frac{x}{25}$ Sohan's efficiency  $=\frac{x}{20}$ Work for 5 days together, work done  $= 5 \times \left[\frac{x}{25} + \frac{x}{20}\right]$  $= 5 \times \left[\frac{4x + 5x}{100}\right] = \cancel{5} \times \left[\frac{9x}{\cancel{100}}\right] = \frac{9x}{20}$ Work left  $= x - \frac{9x}{20} = \frac{11x}{20}$ Time taken by Sohan to complete remaining work  $= \frac{\frac{11x}{20}}{\frac{x}{20}} = \frac{11x}{20} \times \frac{20}{x} = 11 \text{ days}$ 

## $\overline{20}$

146 Option (c) is correct. **Explanation**:

Hours hand rotates 360° in 12 hrs.

 $\therefore \text{ It rotates in 1 hr} = \frac{360^{\circ}}{12^{\circ}} = 30^{\circ}$  $\Rightarrow$  It rotates in 5 hr  $= 30 \times 5 = 150^{\circ}$  $\therefore 1 \text{ hr} = 60 \text{ min}$  $\therefore$  In 60 min it rotates = 30° In 1 min it rotates  $=\frac{30}{60}=\frac{1^{\circ}}{2}$ Rotates in 10

Min 
$$=\frac{1}{2} \times 10 = 5^{\circ}$$
  
 $\therefore$  It will rotate  
 $= 150^{\circ} + 5^{\circ} = 155^{\circ}$   
Ver Option (b) is correct.  
Explanation:  
All the numbers having 2, 3, 7, 8 in the end i.e. in the  
ones place, can not be the square of a natural number.  
 $\therefore$  The number 143642 can not be the square of a natural  
number.  
Ver Option (b) is correct.  
Explanation:  
Given  
 $217x + 131y = 913$  (i)  
 $131x + 217y = 827$  (ii)  
Adding eq (i) and (ii), we get  
 $348x + 348y = 1740$   
 $x + y = 5$  (A)  
Subtracting eq (i) from (ii), we get  
 $86x - 86y = 86$   
 $x - y = 1$  (B)  
Adding (A) + (B), we get  
 $2x = 6 \Rightarrow x = 3$   
putting  $x = 3$  in eq (A), we get  
 $3 + y = 5 \Rightarrow y = 2$   
Hence,  $x = 3$  and  $y = 2$   
Ver Option (a) is correct.  
Explanation:  
 $\frac{(598 + 479)^2 - (598 - 479)^2}{598 \times 479} = ?$   
 $a = 598$   
 $b = 479$   
 $\therefore$   $(a + b)^2 - (a - b)^2$   
 $= a^2 + b^2 + 2ab - a^2 - b^2 + 2ab$   
 $= 2 ab + 2 ab$   
 $= 4 ab$   
 $\therefore \frac{4ab}{ab} = \frac{4 \times 598 \times 479}{598 \times 479} = 4$   
Ver Option (a) is correct.  
Explanation:  
Initial population = 1,76,400  
Rate  $= 5\%$   
New population after two years  
 $= \left(1 + \frac{R}{100}\right)^2 \times 1.76400$   
 $= \left(\frac{100}{100} + \frac{2}{100} \times \frac{105}{100} \times 1.76400$   
 $= \frac{21}{100} \times \frac{105}{100} \times 1.76400$   
 $= \frac{21 \times 105 \times 1764}{20} = 194,481$ 

(i) (ii)

(A)

(B)