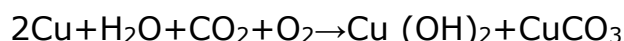


Solution Set of NDA General Ability Test

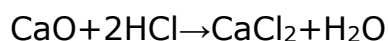
1. Ans. A.

copper metal turns green in color because of corrosion when exposed to air. In rainy season when copper exposed then it reacts with gases and moisture. After it atmospheric gases form a mixture of copper carbonate and copper hydroxide. This gives green color to the surface of copper metal.



2. Ans. B.

Quick lime is the base that reacts with a solution of hydrochloric acid and form salt or water. This reaction is the example of exothermic reaction and do not release carbon dioxide. Marble, Limestone and chalk react with HCl and release CO_2 .



3. Ans. D.

Honey is actually a pure substance. Honey is made through a process in which nectar is collected by bees. From the substance, nectar cannot be separated. Honey is having uniform property.

Ice is heterogeneous mixture. If all the ice were to melt and there were no impurities present, it would not be mixture at all but would just be compound H_2O . The appearance of ice is plainly uniform throughout but composition is not uniform. Ice-cream is also mixture of different compounds.

Air is the mixture of various gases, dust particles and water vapors. Air can be separated into its constituents who do not react to each other. Air shows properties of all the gases present in it.

4. Ans. B.

Crystal growth often occurs when ground water moves into pores and empty spaces of rocks by capillary action. As the water evaporates salt crystals grow and accumulate, putting pressure on the rocks and causing it to break apart. This happens in the physical weathering, weakening and subsequent disintegration of rocks by physical forces. The physical forces include temperature, fluctuation, frost action and salt crystal growth.



Chemical weathering means disintegration of rocks by chemical reactions like oxidation, carbonation and hydrolysis etc. biological weathering is the weakening of rocks by plants, animals and microbes like plant roots, microbial activity. Bio chemical weathering is when microbes and vegetation release organic acids, facilitate hydrolysis of minerals. Complex ions within the minerals help their release.

5. Ans. B.

India has fifth largest coal reserves in the world. Coal deposits primarily found in eastern and south-central India. Jharkhand, Orissa, Chhattisgarh, west Bengal Madhya Pradesh, Telangana and Maharashtra accounted for 98.26 % of the total known coal reserves in India. Value of coal reserves in billion metric tones:

Jharkhand- 83.5

Odisha- 79.30

Chhattisgarh-57.21

West Bengal- 31.67

6. Ans. D.

The Richter scale is a magnitude scale used to tell the power/ magnitude of earthquake. It is developed by Charles F. Richter in 1935. The earthquake magnitude is determined using the logarithm of the amplitude of the largest seismic wave calibrated to scale by a seismograph. Richter scale has no upper limit.

In theory richter scale has no upper limit but in practice no earthquake has ever been registered on the scale above magnitude 8.6, richter magnitude for the Chile Earthquake of 1960.

7. Ans. C.

Canary current- it is a cold current and part of north Atlantic gyre. It is along the margin of Spain, Portugal and west Africa.

California current- it is a cold current and moves south ward along the coast of California.

Kuroshio current- it is a warm current also called Japan Current. It is North Equatorial Current along the Philippines, Taiwan and Japan Coast.

Oyoshio Current- it is a cold current flows along the east coast of Kamchatka Peninsula.

8. Ans. B.

The periodical rise and fall of the sea level, once or twice a day, mainly due to the attraction of the sun and the moon is called tide. To balance the force of gravity there is another factor called centrifugal force is acting. Together the gravitational pull and centrifugal force is responsible to creating two major tide bulges on the earth. Interval between two high tides and low tides is exactly 12 hours and 26 minutes.

9. Ans. D.

Enamel is the hardest substance in the human body and contains the highest percentage of minerals at 96% with water and organic material composing the rest. Hydroxyapatite is the primary mineral which is a crystalline Calcium Phosphate. Formation of enamel takes place while tooth develop within the jaw bone before appearing in to the mouth. It does not contain blood vessel and nerves.

10. Ans. A.

we know that $g = \frac{GM}{R^2}$

Mass of planet $M_1 = \text{density} \times \text{volume}$

$$M_1 = d \times \frac{4}{3} \times \pi \times r_1^3$$

$$M_2 = d \times \frac{4}{3} \times \pi \times r_2^3$$

$$\text{Now } g_1 = \frac{G \times d \times \frac{4}{3} \times \pi \times r_1^3}{R^2}$$

$$g_2 = \frac{G \times d \times \frac{4}{3} \times \pi \times r_2^3}{R^2}$$

We get ratio of gravity is $\frac{g_1}{g_2} = \frac{r_1}{r_2}$

Given that $r_1 > r_2$ then $g_1 > g_2$

11. Ans. B.



It is because of refraction of light in the atmosphere. Light enters from rarer to denser medium when it enters from vacuum to earth's surface. It bends towards Horizon. At the time of Sunrise, we see sun early because sun is just below the horizon and our atmosphere causes the light rays to bend. Also the time of sunset, because of same bending of rays we see only apparent position of sun not the actual position.

12. Ans. B.

The velocity of object A is highest because it is covering more distance in less time. As we know speed is the ratio of distance and time. Object C is having less distance in more time than the speed will be less.

So the correct relation will be $V_A > V_B > V_C$

13. Ans. D.

A dyne is derived unit of force specified in the centimeter gram second (CGS) system. One dyne is equal to 10^{-5} kg m/s² or 10^{-5} N. Further a dyne can be defined as force required to accelerate a mass of one gram at a rate of one centimeter per second squared.

14. Ans. C.

CD is representing accelerated motion because velocity is increasing with time. And we know that positive change in velocity with time is acceleration.

AB representing decelerated motion because velocity keeps decreasing with increase of time. And negative change in velocity with time is known as decelerated motion.

15. Ans. C.

The thermos flasks were invented by Reinhold Berger and Albert Aschenbrenner.

Thermos flask is super insulated jug. It consist of inner chamber and outer plastic or metal case separated by two layers of glass with vacuum in between. The glass is usually lined with reflective metal layer means having shiny surface. The vacuum prevents conduction. When infrared tries to leave the liquid, the reflective inner chamber reflects it straight back in again. So there is no way for heat to go outside and outer wall can absorb it.

16. Ans. C.



Black hole is a place in space-time which is having strong gravitational acceleration. No particle even electromagnetic radiation can escape it. According to theory of relativity prediction has been made that sufficiently compacted mass can transform to form Black hole.

17. Ans. A.

to convert temperatures into degrees Celsius to Fahrenheit, we use the formula in which value in degree Celsius multiplied by 1.8 and then added to 32.

$$^{\circ}\text{F} = 32 + (1.8 \times ^{\circ}\text{C})$$

18. Ans. B.

When a beam of white light passes through a glass prism, the emergent ray is deviated from its original direction by a certain angle. This angle is called angle of deviation. During dispersion of white light, red color has the least deviation.

19. Ans. A.

LIGO stands for Laser interferometer Gravitational wave observatory. It is a large scale physics experiment. It is aiming to directly detect gravitational waves. LIGO consists of a pair of huge interferometer, each having two arms which are 4 km long. It is located in Livingston, Louisiana and Hanford, Washington, USA both measures ripples in the fabric of space time.

20. Ans. A.

Fuse is a piece of wire of a material with a very low melting point. When a high current flows through the circuit due to overloading or short circuit, at that time wire gets over heated and melts. As result of it, the circuit got broken and current stops flowing. They should have high conductivity than all other conductor present in the circuit otherwise an accidental fuse will blow somewhere else.

21. Ans. C.

Kamarajar port was originally commissioned to handle thermal coal. It was to fulfill the requirement of Tamil Nadu Electricity Board. It was provided the large amount of land around 2000 acres. The commercial operation started on 22 June 2001. It is located on the Coromandel Coast about 24 km north of Chennai Port.



22. Ans. D.

Lakshadweep is the smallest Indian union territory having area of 32 sq km. it is an archipelago consisting of 36 island. It is a uni-district union territory. It consist three reefs, 12 atolls, 5 submerged banks and 10 inhabited island. Its territorial water extends by 20000 sq km and exclusive economic zone to 400000 sq km. the administrative headquarters of Lakshadweep is Kavaratti. The islands are come under restricted area and one need permission from administration to visit the islands.

23. Ans. C.

The polar front theory of Cyclogenesis was first developed in the early 1900s to explain the formation of mid-latitude cyclones. A mid-latitude cyclone is a large scale low pressure system that travels eastward around the planet between 30 and 70 degrees latitude. It is crucial to day to day weather changes and to bring rain and storms to the planet. The polar front is boundary between cold wind from poles and warm winds from the equator. Usually cold winds blows from the east between 60 and 90 degree latitude, called polar easterlies. The warm wind blows from the west between 60 and 30 degree latitude and are called westerlies. These winds cause mid-latitude cyclones.

24. Ans. B.

Antecedent Rivers is a stream that maintains its original course and patterns instead of the changes in underlying rock topography. An Antecedent Rivers existed before the up lift-ment of mountains and cut across it to make their way. For Example River in Himalayan region did not change their course even during the upliftment of Himalayas.

25. Ans. D.

The Karachi session was presided by Sardar Patel. In this session congress adopted resolution on Fundamental rights and economic policy. It was showing party's social, economic and political programme. It was later known as Karachi Resolution. One of the resolutions was government ownership and control of key industries, mines and means of transport.

26. Ans. C.

Treaty of Schonbrunn (1809) sometimes known as Peace of Schonbrunn. It was signed between Austria and France at Schonbrunn palace near



Vienna on 14 October 1809. It is also called Treaty of Vienna. After Austria had been defeated at the battle of Wagram on 5-6 July, this treaty ended this coalition in Napoleonic war.

27. Ans. A.

New Model Unions were variety of trade unions. It was prominent during the time of 1850s and 1860s. New Model Unions restricted individual trade. They were usually highly paid skilled trades including artisans. They were more focused on education and negotiations rather than strike action. Members of this unions received benefits also in times of need, such as illness, injury and unemployment etc.

28. Ans. A.

In 1947, President Harry S. Truman pledged that the United States would help any nation resist communism in order to prevent its spread or containment of the USSR. His policy of containment is known as Truman Doctrine.

29. Ans. C.

Burma also called Republic of the Union of Myanmar admitted to member of United Nations on 19th April 1948. After that Burma supported the USA in cold war because of close relation with USA. Burma also helped South Korea during Korean War and also was against China. With China, Burma shares long border and have a lot of disputes.

30. Ans. D.

In Russian history, 'The April Theses' program developed by Lenin during the Russian Revolution of 1917. This was published in April 1917. Lenin represented a distinct faction of the Russian Social Democratic Labour Party known as Bolsheviks, who had very clear ideas about the future of Russia. This April Theses was focused to maintain all the revolutions (February revolution) and decide the future of Russian government.

31. Ans. B.

An election Commissioner can be removed from the office by the President only on the recommendation of the Chief Election Commissioner although they are appointed by President only.

32. Ans. D.



- Rajya Sabha is upper house of the parliament. It is playing the role of permanent house in the legislature. The members in Rajya Sabha re-elected by the elected members of state legislative assemblies and indirectly elected from union territories by members of an electoral college specially constituted in Delhi and Puducherry. President nominates 12 members from the field of art, literature, science and social service.
- Constitution has adopted proportional representation by means of single transferrable vote for the election of Rajya Sabha.
- Rajya Sabha is a permanent body, however one third of its members retire every second year. It cannot be dissolved by President.

33. Ans. A.

article 19 provides six fundamental freedom to the Indian citizens. It is not available to foreigners. It consists freedom of speech and expression, assemble peacefully, form co-operative society, reside in any part of the India and practice any profession.

Article 20 (protection in respect of conviction of offences), article 21(Protection of life and personal liberty) and article 22(Protection against arrest and detention in certain cases) is available to both citizens and non citizens.

34. Ans. A.

The Treaty of Yandabo was signed on 24 February 1826. It was signed by General Campbell from the British side and governor of Legaing Maha Min Hla Kyaw Htin from the Burmese side. 250000 pounds sterling in Gold and Silver bullion paid by Burmese as the first installment and also released British Prisoners of war.

35. Ans. D.

The laws of Manu is considered to be one of the standard religious texts for Hindu. The law of Manu outlined eight types of Marriage existed in Ancient Hindu Life. Following are the types of marriages.

- Brahma- father of the bride chooses a man learned in Vedas and known for his good conduct and gives his daughter to him.
- Daiva (Gods)- daughter is groomed with ornaments and gifted to a priest who duly officiates wedding ceremony, during which a sacrifice is performed.



- Rishis (Arsha)- father gives his daughter away after receiving a cow and a bull from bridegroom as a gift of appreciation.
- Prajapatya- father gives his daughter away by giving blessings to the couple. The couple is to perform all the duties like civic and religious together.
- Asuras (demons)- bridegroom receives a maiden after bestowing wealth to the bride and her kinsmen. It is widely regarded as selling of a bride
- Gandharva- marriage involves voluntary union of a maiden and her lover arising out of physical desire and sexual intercourse.
- Rakshasa- it is kind of forceful kidnapping of a girl from her home.
- Pisaka- man uses stealth to seduce a girl who is sleeping or intoxicated or handicapped. It is hard to distinguish between marriage and rape.

36. Ans. C.

It is the description of Sadaiv Atal, the Samadhi of former Prime Minister of India Atal Bihari Vajpayee. It was dedicated to the nation on the birth anniversary of Prime Minister Atal Bihari Vajpayee.

He served as the Prime Minister for a term 13 days in 1996, then for 13 months from 1998 to 1999 and for a full term from 1999 to 2004.

His birth anniversary is celebrated as Good Governance Day.

37. Ans. D.

IMBAX is a bilateral military exercise between India and Myanmar. The first exercise will be held from November 20 to 25 in Umrol in Meghalaya. This military training exercise is the first of its kind on United Nations peacekeeping operations between India and Myanmar.

38. Ans. A.

English Writer Neelum Saran Gour author of Requiem in Raga Jankibagged was awarded the Hindu prize for fiction category.

This prize instituted to honour writers who have spent their lifetime mining the human spirit through their words and ideas. This idea got origination in the 20th year of literary review.

39. Ans. C.



Bihar deputy Chief Minister Sushil Modi appointed as head of the the committee looking into the issue of revenue shortfall faced by the states after the GST implemented in India. The committee consist seven members in it. Committee is expected to suggest some steps for segmenting collection.

Key roles of the committee are undertaking data analysis using economical and statistical tools, taking account of revenue collection before GST and after GST, look into structural patterns of major sector impacting revenue collection and identifying the reasons for deviations from the actual designs etc.

40. Ans. D.

15th Pravasi Bharatiya Divas, 2019 was held in holy city of Varanasi, Uttar Pradesh. It starts from 21 January up to 23 January 2019. The theme for this year was 'Role of Indian Diaspora in Building a New India'. It was organized by Ministry of External affairs in associations with Uttar Pradesh government. It was inaugurated by Narendra Modi and his Mauritian counterpart Pravind Jugnauth.

Pravasi Bharatiya Divas celebrated every year in India on 9 January. This day commemorates return of nation's father Mahatma Gandhi from South Africa. This day was formally established in 2003 to mark the contributions of overseas Indian community to the development of India.

41. Ans. C.

Rio de Janeiro has been reorganized as 'World Capital of Architecture' for 2020 by United Nations Educational, Scientific and cultural Organization.

World Congress of the International Union of Architects will be hoisting by Rio de Janeiro in 2020. The theme for this is "All the World, Just one World"

World Capital of Architecture initiatives is the common commitment between UNESCO and UIA for preserving architectural heritage in the urban context. World Capital of Architecture is aiming to become international forum for debates about global challenges related to cultural heritage and architecture.

42. Ans. A.

India's fast rising wicket-keeper batsman Rishabh pant named as emerging Player of the year 2018 by the International Cricket Council in



the world body's annual awards. He is 21 years old picked by ICC's voting academy for a stellar show in his breakthrough Test year in 2018.

He is the first Indian wicketkeeper to score a test hundred in Australia. He became the first Indian wicket keeper to score test century in England and record for the most catches taken in a test.

43. Ans. C.

India's first private sector howitzer gun-making unit is located in Hazira, Surat. It is a trans shipment port and a suburb in Surat district of Gujrat.

Larsen and Toubro won the contract to supply 100 self propelled gun system in the army. This complex is spread over 40 acres, within L&T's 755 acre Hazira manufacturing complex. This is country's first private facility where K9 Vajra self-propelled Howitzer guns will be manufactured.

44. Ans. D.

Ross island- it is officially known as Netaji Subhash Chandra Bose island. It belongs to the south Andaman administrative district, Andaman and Nicobar island. This is situated 3 km east from central Port Blair.

Neil Island- It is also known as Shahid Dweep. It's one of the India's Island in Bay of Bengal.

Havelock Island- another name for this Island is Swaraj Dweep. It is part of Ritchie's archipelago in India's island in Andaman. It's known for its dive sites and beaches like elephant beach, Radhanagar beach etc.

45. Ans. B.

Nazir Ahmad Wani was conferred with Ashok Chakra. He laid down his life during an anti-terror operation at Batagund village in J&K shopian in November last year.

Ashok Chakra is India's highest peacetime Gallantry medal. It is the peacetime equivalent of the Param Vir Chakra. It is awarded for the most bravery or daring act and self sacrifice. It was originally established on 4 January 1952. This may be awarded to military or civilian personnel.

46. Ans. B.

The Latin scientific name of species is a two-part consisting genus name and species name. The basic Rule for writing a scientific name is-



- Use both Genus and species name: *Amoeba proteus*
- Italicize the whole name.
- Capitalize only the Genus name.

47. Ans. D.

Electrocardiogram is a test that checks functioning of heart by measuring the electrical activity of heart. After every heart beat a electrical impulse travels through your heart. This wave causes muscle to squeeze and pump blood from the heart. Electrocardiography is the process of producing Electrocardiogram.

48. Ans. B.

Penicillin is a group of antibacterial drugs that attach wide range of bacteria. *Penicillin* fungi are the source of penicillin, people can take orally or via injection. Alexander Fleming is the discoverer of Penicillin.

People are not developing resistance against penicillin, but the Bacteria is developing. From Beta Lactamase are the enzymes produced by Bacteria. It provide resistant to Beta-lactum antibiotics such as penicillin, cephalosporins etc.

49. Ans. C.

Lysosomes are the membrane bound structure formed by Golgi apparatus. This organelle have been found to be rich in all types of hydrolytic enzymes i.e. hydrolase, lipases, proteases and carbohydrases which digest carbohydrates, protein, lipids, and nucleic acid at acidic Ph.

They are known as suicidal bags as it destroys its own cells by secreting hydrolytic enzymes.

50. Ans. C.

Cholera is a disease causing severe Diarrhoea and dehydration, usually spread through contaminated water with a bacterium called *Vibrio Cholerae*. People may feel pain in abdomen, nausea, vomiting or watery Diarrhoea. Whole body will feel dehydration, lethargy or water-electrolyte imbalance.

Treatment of Cholera includes rehydration with fluids and use of antibiotics. Cholera is fatal if not treated right away



51. Ans. D.

Plasma membrane does not contain nucleic acids- DNA and RNA. The major components of plasma membrane are – lipids, glycol-lipids, and cholesterol.

Nucleic acid is a term used for both DNA and RNA. They are small biomolecules essential for all life forms.

52. Ans. A.

Mitochondria, Nucleus and Chloroplast are the three organelles that actually contains their own genetic material. Apart from these three, all other organelles are considered non-living part of the cell or may not be possessing their own genetic material or DNA.

53. Ans. C.

Pericycle functions to provide support, structure and protection for the plants. It surrounds the xylem and phloem in the stem.

Tracheids which are a part of xylem of vascular plants, serve in the transport of water and mineral salts.

Sieve Tubes are the conduits of food (which is mostly sugar) transport. Tubes are the living cells in phloem.

54. Ans. C.

Marsilea has vascular tissues. They belong to the genus Marsilea of family heterosporous. They grow in aquatic and semi-aquatic ecosystem.

Some examples of non-vascular plants are-

- Bryophyte (mosses)
- Marchantiophyta (liverworts)
- Anthrocerotophyta (hornwort)
- Algae (especially green algae like Cladophora)

55. Ans. A.

Primary consumers are defined as herbivores which feed on plants for their food.



Examples are- Caterpillars, insects, grasshoopers, termites, hummingbirds, etc. they eat autotrophs only.

56. Ans. A.

Spring tide: At the time of new and full moon, the gravitational pull of Sun and Gravitational pull of the moon on Earth are supplementary. This results into high tide more than usual. This increase is called as Spring tide. In this, there is greatest difference in the sea level at high and low tides.

57. Ans. C.

Potential energy is present between the links of the atom. When two atoms come closer, the potential energy decreases as the repulsive force increases. when a bond is formed. The energy of the system will decrease.

58. Ans. A.

Sunlight is a mixture of different colors. When it passes through a shower of rain which acts like a prism, it gets bent or refracted. Light leaving the prism spreads into continuous bands of color known as spectrum forming VIBGYOR.

A combination of Convex and Concave lens having same refractive indexes will behave as a plane mirror and light will simply pass through it.

59. Ans. C.

When an apple hangs to the tree, it stores Gravitational Potential Energy. When it falls, it comes in motion and the stored energy is converted to Kinetic Energy. When apple hits the ground, kinetic energy is transformed into heat energy and when it finally hits the ground it produces sound energy.

60. Ans. D.

Pitchblende is a radioactive, uranium-rich mineral and ore it has chemical composition, which is largely UO_2 , but also contains UO_3 and oxides of lead, thorium and Rare earth elements. It contains a small amount of radium as a radioactive decay product of Uranium.

61. Ans. B.



Option (A) and (C) are the formulas for soaps which contains long hydrocarbon tails with negatively charged carboxyl head.

Option (D) is an example for non-ionic detergents. They contain a long hydrocarbon tail, and a polar alcohol ethoxylate group. They are molecules, not ions.

62. Ans. B.

Propane, also known as Liquefied Petroleum Gas (LPG) is a clean burning fuel. It used to power lights, and heavy-duty propane vehicles. Propane consists of three-carbon alkane gas (C_3H_8), colorless and odorless.

63. Ans. C.

Magnesium does not react with Cold Water.

Metals when react with water, produces metal oxides and hydrogen gas. It depends on the reactivity of metals. Metals like Potassium and Sodium react violently with cold water. Calcium reaction with water is less violent. However, Magnesium does not react with Cold Water.

64. Ans. B.

Isoelectronic refers to two atoms/ions/molecules have the same number of electronic structure and same number of valence electrons.

Na^+ and O^{2-} are isoelectronic with the structure 2, 8.

65. Ans. D.

The inorganic portion of Silicon Resin 'cements' the filler and the pigment together, creating permanently water-repellant capillaries and pores.

Phthalocyanine is the primary green and blue paints.

66. Ans. A.

Air mass can be formed in tropical as well as polar regions. Air masses that form near the equator or in tropical region are warmer than the one formed in polar regions also known as Arctic Air Mass. Polar air mass is cold, dry and stable and generally originate over northern Canada and Alaska as a result of radiational cooling.

67. Ans. C.

National Water Academy was formerly known as Central Training Unit. It was setup in Central Water Commission by the Ministry of Water Resources, RD and GR, GoI in the year 1988. It aims to impart training to the in-service engineers of various central/state organizations involved in the water resources. The NWA is envisaged to function as a 'Centre of Excellence' in training water resources personnel.

68. Ans. C.

Campos and Llanos the extensive grasslands located in Eastern part of South America. These are spread across many countries like Argentina, Uruguay and southern Brazil.

69. Ans. A.

Adelaide is famous for viticulture. Wine of Australia is very famous in the whole world. The main producer of wine is southern state of Australia. Adelaide is the coastal city of South America.

70. Ans. D.

Shamal warm and dry wind is a local wind found around Mesopotamia. It is the hot, dry and dusty wind from the northwest in Iraq, Iran and Arabian Peninsula. It causes great dust storm in the region. It blows north westerly.

71. Ans. A.

Inversion of Rainfall means with the increase in altitude results in decreased amount of rainfall. An elevated band along mountain slopes where precipitation decreases with increasing elevation. In the lowest 1-2 km above the base of mountain, rainfall increases typically with increase in height until the zone of maximum precipitation is reached. Above this, the rainfall decreases with height. This zone is known as precipitation inversion.

72. Ans. C.

'History of British India' written by James Mill, is a compilation of company rule in India. The book was published in 1817. James mill was a Scottish born historian and philosopher.

73. Ans. A.

Azamgarh Proclamation of August 25, 1857 issued by Mirza Feroz Shah Shahzadah, an important leader of 1857 revolt. Unlike others, Feroz Shah



was never captured and managed to escape from India. The proclamation in simplified version was as-

“To all the Hindus and Mohammedens, who are faithful to their religion know that sovereignty is one of chief boons. For all the years, English have been desirous of converting all men to Christianity by force and doing away with the religion of Hindus and Muslims.”

74. Ans. D.

Viceroy Lord Willingdon in a letter of 1931 said, “ it’s a beautiful world if it was not for Gandhi who is a complete nuisance”. Lord Willingdon was the viceroy of India for the period 1931 to 1936. He brutally suppressed the Civil Disobedience Movement after second Round Table Conference.

75. Ans. C.

Sir Birendra Nath Mukherjee was an Indian industrialist who established Steel Making Facilities at IISCO, Burnpur. He favoured ‘Healthy Capitalism’ to work towards a common object. Gandhiji encouraged Khadi and village industry.

76. Ans. B.

Joseph Noel Paton created the famous art piece ‘In Memoriam’.

British rule in India was challenged in 1857 with the sepoy mutiny. Many white women and children were massacred by Indian men. There was extensive coverage by Press and journals which called for revenge. Paton’s famous painting “In Memoriam” was dedicated to the Christian heroism of “British Ladies in India during the mutiny of 1857.”

77. Ans. B.

Static charge only develops to insulators. These are the materials that do not allow the flow of charged electrons through them. They hold on to electrons very strongly. Static Electricity can charge insulators. They can build conductors, only when they are isolated.

78. Ans. C.

Sound is a longitudinal wave which needs a medium to propagate and does not travel through vacuum. Speed of sound is determined by density and compressibility of the medium. It is given by the equation,

$$V=(K\rho)^{-1/2}$$

V: speed of sound; K is compressibility and rho is the density.

Speed is also affected by temperature. Sound waves travel faster at high temperature. Speed is usually 1450 to 1498 meters per second in distilled water and 1531 mps in sea at room temperature of (20 to 25°C).

79. Ans. D.

Different metals have different melting point. Melting point for Iron is approx. 1500°C (1538°C). Iron's boiling point is 2,862°C.

Gallium is the metal that melts when you take it in your hands.

80. Ans. D.

Resistance formula, $R=\rho L/A$;

Resistance of first copper wire; $R=\rho l/\pi r^2$ (Area of copper wire is given by $A=\pi r^2$)

Resistance of second copper wire having radius=2r and Length =l/2;

$$R_2=\rho(l/2)/\pi(2r)^2$$

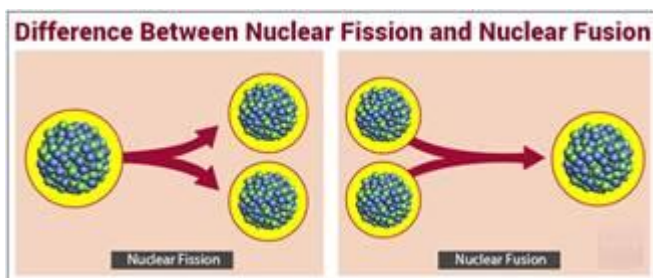
$$\text{So, } R_2=\rho l/(2*4\pi r^2)=\rho l/8A= R/8$$

Hence, option (D) is the correct answer.

81. Ans. D.

The basic principle behind a nuclear reactor is Controlled Nuclear Fission. Nuclear fission and nuclear fusion are both the techniques that produces nuclear energy. In Nuclear Fission, radioactive materials are bombarded with neutrons which split nucleus into smaller nuclei. Whereas, Nuclear fusion is the technique for joining nuclei of light electrons to form a heavy nucleus. In this process also, tremendous energy is released.





82. Ans. C.

Copper is less reactive than Iron as in the given reaction, Copper is reduced by Iron.

The reaction is a type of single Replacement or Displacement reaction. By nature, Displacement reaction is same as Redox reaction. In the reaction, Iron (Fe) displaces Copper (Cu) by giving up two electrons and gets oxidized and forms a new compound called ferrous sulphate. Copper gets reduced.

83. Ans. C.

Organic acids are the organic compounds formed by Carbon and hydrogen atoms. Acetic acid is a common organic acid having formula CH_3COOH .

84. Ans. C.

Dinitrogen (N_2) and dioxygen (O_2) are the main constituents of air but they do not react with each other to form oxides of nitrogen because the reaction is endothermic which requires very high temperature. This is the reason that N_2 and O_2 are unreactive to each other. The very high temperature of lightning bolt causes nitrogen and oxygen in air to react with each other to form Nitric Oxide which further reacts with oxygen to form Nitrogen Dioxide.

85. Ans. B.

Albert Einstein proposed the Laws of Photoelectric effect. Einstein won the Nobel Prize in Physics in 1921. As Einstein described, all the characteristics of the Photoelectric effect are due to the interaction of individual photons with individual electrons. Photoelectric effect is simply the phenomenon of release of electrons when a photon hits an electron on a metal surface. Wave-particle duality concept owes its origin to the photoelectric effect.

86. Ans. B.

Oxalic acid is having the formula of $C_2H_2O_4 \cdot 2H_2O$. the equivalent weight is given by molecular weight divided by n-factor (which has the valency=2 in case of Oxalic acid as it releases 2 H^+ ions).

Molecular weight=126 grams

Therefore, $126/2=63$

Hence, option (B) is the correct answer.

87. Ans. D.

Periyar River originates from Western Ghats and ends into Vembanad Lake which is connected to the Lakshadweep Sea.

Bharatpuzha River originates at Anamalai hills in Western Ghats and takes a westerly course to empty into Lakshadweep Sea.

Pamba river originates in Western Ghats and it finally joins the Arabian Sea.

Tamraparni River or Thamirabarani River originates from Pothigai hills of Western Ghats and flows through state of Tamil Nadu into Gulf of Mannar. It flows eastward.

88. Ans. B.

The river Jhelum is called 'Vitasta' river in Rigveda and Hydaspes by the ancient Greeks. Vitasta is believed to be one of the seven rivers that have been mentioned in Rigveda (Sapta-sindhu). The name is mentioned as Vyeth in Kashmir.

89. Ans. C.

River Sarada originates from far northern Uttarakhand state in Great Himalayas on the eastern slopes of Nanda Devi massif. Before entering to the plains, it is known as River Kali. It then flows south-west . it enters the Gangetic plain at Barmdeo Madi (Nepal). Below that, it is known as Sarada River. It then enters Uttar Pradesh and joins the Ghaghara River south of Behraich.

90. Ans. D.

Mission Indradhanush was launched with the objective to achieve full immunization coverage by the year 2020 for all those children under the age of 2 years and pregnant women who are either unvaccinated or



partially vaccinated against '7' diseases viz. tuberculosis, measles, polio, tetanus, whooping cough, diphtheria and hepatitis B. In 2016, four new vaccines were added viz. Rubella, Japanese Encephalitis, Injectable Polio Vaccine Bivalent and Rotavirus.

91. Ans. B.

The rotation of Earth affects environment in a significant way.

The diurnal change in day light is affected as the Earth rotates. It changes the locations towards the Sun and away from the Sun. Hence, temperature is also impacted by this change. Earth rotation also causes the movement of air and water on its surface. As the Earth rotates eastward, ocean currents are generated in opposite direction. Rotation creates Coriolis force between air and surface of Earth. This creates air circulation between equator and poles in different layers creating global wind system.

Rotation of Earth, gravitational pull of Moon and Sun causes tides.

92. Ans. C.

F G Hutchins described Gandhi's Quit India Movement as a 'spontaneous revolution'

According to Hutchins, it was only after Quit India movement that that British political parties resign themselves to the necessity to leave quickly, whether or not they believed India was 'ready'. Resolution for Quit India movement was passed on Aug 8, 1942 in Bombay and proposed to starting of a non-violent mass struggle.

93. Ans. A.

Abul Fazl was a high-ranking political advisor and minister in Akbar's court. He was the author of Akbarnama and also translated Bible into Persian. He was highly inspired by the secular outlook of Akbar. He was a key advisor to Akbar and played an important role in forming policies of the empire.

94. Ans. D.

All India Kisan Sabha formed in Lucknow in 1936 with Swami sehejanand as its first president and NG Ranga as the General Secretary. It was in close association with Congress. First session was greeted by Jawaharlal Nehru.



Kisan Manifesto was finalized at All India Kisan Committee session in Bombay which was adopted by Congress at its Faizpur session. It included following demands-

- demands for fifty percent reduction in land revenue and rent,
- a moratorium on debts,
- abolition of feudal levies,
- security of tenure for tenants,
- a living wage for agricultural laborers and
- recognition of peasant unions.

95. Ans. C.

Indian Civil Services was started in the year 1855 in London. Satyendranath Tagore became the first Indian to qualify ICS in 1863. From 1922 onwards, ICS exams were held in both Allahabad and in London through merit based open competition. ICS was the backbone for British Administration in India.

Earlier, Indians were not allowed to participate in ICS exams as being a reputed job, it was meant for the British only.

96. Ans. A.

The Power dissipation is given by, $P=I*V$ and Resistance of any wire is given by $R=\rho L/A$

Since, $P=I^2R$, then we have

$$P=I^2\rho l/A$$

Power dissipation by First Wire is given by $P= I^2\rho l/\pi r^2$

Power dissipation by second wire is given by $P_1=I^2\rho 2l/\pi (2r)^2$

$$P_1=I^2 \rho l/2 \pi r^2=P/2 \Rightarrow P=2P_1$$

Hence, option (A) is the correct answer.



97. Ans. D.

Magnetic field strength of Solenoid depends upon the following factors-

- Strength of the magnetic field in ampere-turns/meter
- Current flowing through the solenoid
- Number of turns of the coil
- Length of the solenoid in meters

It does not depend upon the diameter of solenoid.

98. Ans. A.

Light Year is a unit of long distances. It is calculated by the distance travelled by light in one year which is given as 9.5 trillion kilometers. Light moves at a velocity of about 300,000 km each second. So, light year is the distance covered by light in one Julian year.

99. Ans. C.

For a telescope, the angular magnification MA produced by the combination of a particular eyepiece and objective can be given by

$MA = f_o / f_e$; where, f_o is focal length of objective and f_e is focal length of eyepiece

$$25 = 50 / f_e. \text{ So, } f_e = 50 / 25 = 2 \text{ cm}$$

Hence, option (C) is the correct answer.

100. Ans. A.

Non-central forces are the forces which do not usually depend upon the distance between centres of interacting bodies but depends upon other factors like spin and their relative orientation.

Non-conservative forces are the forces which are dependent on path. They are dissipative forces such as friction forces and air drags.

Gravitational force, spring force, magnetic force and electric force are examples of conservative force which is independent of the path followed.

101. Ans. C.



Replace 'with' with 'to'. Opening his letters, reading them carefully and sending for his clerk, he dictates answers to them. This will be the correct ans.

102. Ans. A.

This sentence is in present tense. Replace 'was' with 'is' He is my school friend but becoming a great man he has grown proud enough to forget his old friends.

103. Ans. C.

Replace found with founded. Rabindranath Tagore, a Nobel laureate and the author of the national anthem, founded shantiniketan.

104. Ans. A.

Replace 'into' with 'in'. The art of printing was introduced in England during the reign of Edward IV by William Caxton, a native of Kent.

105. Ans. A.

Replace 'from' with 'for'. For thirty years he devoted himself to public affairs without taking a holiday.

106. Ans. A.

In conditional clause there is no use of future tense. If Ramesh is promoted he will get a higher salary.

107. Ans. C.

Replace 'five day week' with 'Five days a week'.

108. Ans. C.

Here Never is adverb of frequency so never will come after will. Between helping verb and main verb, if you lend mohan a pen he will lend it to someone else and you will never get it back.

109. Ans. A.

Use the before superlative degree 'most'. One of the most widely spread bad habits is the use of tobacco.

110. Ans. A.



This is a simple present tense. A great part of Arabia is desert. No error.

111. Ans. A.

Run into means mismanage something to ruin.

112. Ans. C.

Misery means great suffering.

113. Ans. B.

Delight means happiness.

114. Ans. D.

Starvation means hunger or apatite.

115. Ans. B.

Grievance means complaint.

116. Ans. A.

Slandorous means abusive.

117. Ans. D.

Gigantic means very big, enormous.

118. Ans. B.

Abolish means to end a law or system officially.

119. Ans. D.

Oasis means where water available. Like sping.

120. Ans. A.

Various means several, types.

121. Ans. C.

Dubious means not sure or certain. Antonym of dubious is trustworthy.

122. Ans. A.

Unmindful means careless. Vigilant means careful. So option A is correct answer.

123. Ans. C.

Opposite of able to cure is terminal.

124. Ans. C.

Ominous means suggesting that something bad is going to happen.

125. Ans. D.

Hostility means against someone. So appropriate answer is friendship.

126. Ans. A.

Monotonous means dull or not interesting. So exciting is the correct antonym.

127. Ans. B.

Repulsive means unattractive. So option B is correct answer.

128. Ans. D.

Serene means calm, and its opposite is turbulent.

129. Ans. C.

Transient means lasting or continuing for a short period of time. Eternal means without beginning and end.

130. Ans. A.

Vain means arrogant. Modest is the suitable antonym.

131. Ans. B.

a person who wins a race or competition although no one expected him to is called a dark horse.

132. Ans. C.

A show-stopper means a performance that is extremely good.

133. Ans. A.

A jack of all trades means someone who has many skills.

134. Ans. D.

Fight tooth and nail means to try hard to achieve something.

135. Ans. A.

The phrase Fair and square means in an honest way.

136. Ans. A.

We don't know what to do with our knowledge Science has given us superhuman powers, which we do not use properly For example, we are unable to manage our machines. Machines should be fed properly and waited upon attentively; otherwise they refuse to work or cause destruction We already find it difficult to do without machines In the course of time they may rule over us altogether. So S P R Q is the correct sequence.

137. Ans. B.

The British rule in India has brought about moral, material, cultural and spiritual ruination of this great country I regard this rule as a curse I am out to destroy this system of Government Sedition has become my religion Ours is a non-violent battle. The correct sequence is P S Q R.

138. Ans. A.

Unidentified gunmen shot dead two workers and injured another during the urban local body elections.

Q S R P is the correct ordering of words.

139. Ans. D.

This state has a history of both intense political and religious contestation and of syncretic accomplishments. The correct sequence is Q P S R.

140. Ans. B.

P S R Q is the correct sequence. The father also feels let down by the system in his quest for justice.

141. Ans. C.

Author says that we were one nation we had no differences.

142. Ans. B.

The great sages of India establish pilgrimages in the different corners of the country Because they could observe the underlying unity of the country as made by nature.

143. Ans. A.

The author's attitude towards the railways is critical. Because author said that you were at liberty now to say that it is through the railways that we are beginning to abolish those distinctions.

144. Ans. D.

According to the author Whose hearts were aglow with righteousness had the Ganges in their own homes means the purity of heart is superior to observance of any ritual.

145. Ans. D.

In the whole paragraph author is analyzing the situation. So we can say this paragraph is written in a analytical style.

146. Ans. B.

Dense forests prevent erosion.

147. Ans. C.

bust is synonym of arrest. So here relevant option is C.

148. Ans. A.

A woman got into the car and drove off. So option A is the correct ans.

149. Ans. C.

Dozed off – means fall asleep. So the correct answer is option C



150. Ans. A.

The cops suspect murder by kin. Suspect is the right answer.

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