

WBCS (Main) Exam Paper – IV Practice Set

Answers with Explanation

1. (c) The Seine is a 776 km-long river and an important commercial waterway within the Paris Basin in the north of France. The Potomac River flows into the Chesapeake Bay, located along the mid-Atlantic coast of the United States. The Rhine is a river that flows from Grisons in the eastern Swiss Alps to the North Sea coast in the Netherlands and is the twelfth longest river in Europe. Germany, Austria, Switzerland, France, Netherlands are countries traversed by it. The Danube is a river in Central Europe, the continent's second longest after the Volga. Classified as an international waterway, it originates in the town of Donaueschingen which is in the Black Forest of Germany at the confluence of the rivers Brigach and Breg. The Danube then flows southeast for 2,872 km, passing through four Central European capitals before emptying into the Black Sea via the Danube Delta in Romania and Ukraine. শ্রেণীভিত্তিক
2. (a) Shanghai is the largest city by population in the People's Republic of China and the largest city proper by population in the world. Located in the Yangtze River Delta in eastern China, Shanghai sits at the mouth of the Yangtze River in the middle portion of the Chinese coast. Bangkok is the capital city of Thailand and the most populous city in the country. The city occupies 1,568.7 square kilometres in the Chao Phraya River delta in Central Thailand. Dresden is the capital city of the Free State of Saxony in Germany. It is situated in a valley on the River Elbe, near the Czech border. Montreal is located in the southwest of the province of Quebec. The city proper covers most of the Island of Montreal at the confluence of the Saint Lawrence and Ottawa Rivers. শ্রেণীভিত্তিক
3. (a) The Grand Canyon is a steep-sided canyon carved by the Colorado River in the United States in the state of Arizona. It is contained within and managed by Grand Canyon National Park, the Hualapai Tribal Nation, and the Havasupai Tribe. Nearly two billion years of the Earth's geological history have been exposed as the Colorado River and its tributaries cut their channels through layer after layer of rock while the Colorado Plateau was uplifted. While the specific geologic processes and timing that formed the Grand Canyon are the subject of debate by geologists, recent evidence suggests the Colorado River established its course through the canyon at least 17 million years ago. শ্রেণীভিত্তিক
4. (b) The Black Forest is a wooded mountain range in Baden-Württemberg, southwestern Germany. It is bordered by the Rhine valley to the west and south. Rivers in the Black Forest include the Danube (which originates in the Black Forest as the confluence of the Brigach and Breg rivers), the Enz, the Kinzig, the Murg, the Nagold, the Neckar, the Rench, and the Wiese. The Black Forest is part of the continental divide between the Atlantic Ocean drainage basin (drained by the Rhine) and the Black Sea drainage basin (drained by the Danube). শ্রেণীভিত্তিক
5. (b) The Suez Canal is an artificial waterway in Egypt extending from Port Said to Suez and connecting the Mediterranean Sea with the Red Sea. It is one of the world's most important waterways. The canal separates the African continent from Asia, and it provides the shortest maritime route between Europe and the lands lying around the Indian and western Pacific oceans. It is one of the world's most heavily used shipping lanes. The canal extends 101 miles (163 kilometres) between Port Said in the north and Suez in the south, with dredged approach channels north of Port Said into the Mediterranean, and south of Suez. শ্রেণীভিত্তিক
6. (a) The Pacific Ring of Fire is an area where a large number of earthquakes and volcanic eruptions occur in the basin of the Pacific Ocean. In a 40,000 km horseshoe shape, it is associated with a nearly continuous series of oceanic trenches, volcanic arcs, and volcanic belts and/or plate movements. The Ring of Fire has 452 volcanoes and is home to over 75% of the world's active and dormant volcanoes. শ্রেণীভিত্তিক
7. (a) The Strait of Gibraltar is a narrow strait that connects the Atlantic Ocean to the Mediterranean Sea and separates Gibraltar and

Spain in Europe from Morocco in Africa. On the northern side of the Strait are Spain and Gibraltar (a British overseas territory in the Iberian Peninsula), while on the southern side are Morocco and Ceuta (a Spanish exclave in North Africa).

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8. (a) Jabalpur: Narmada; Paris: Seine; London: Thames; and Lahore: Ravi River flows on the north-western side.
9. (d) Peshawar in Pakistan is near to Khyber Pass.
10. (d) Kalahari Desert: a large semi-arid sandy savannah in southern Africa; Atacama Desert: the driest hot desert in the world, located in South America; Thar Desert: a large, arid region in the northwestern part of the Indian subcontinent, and Great Victoria: a sparsely populated desert area in Western Australia and South Australia.
11. (a) Taiga: Verkhoyansk (Siberia); Monsoon: India; Alpine: La Paz (Bolivia); Desert: Jacobabad (Sindh, Pakistan).
12. (c) The phenomenon of rise or fall of liquid in a capillary tube is called capillarity. Oil rises through a wick due to capillarity. The narrow pores in the threads of a wick act like tiny capillaries, through which oil rises. Capillary action is the result of adhesion and surface tension.
13. (c) The volume of materials changes depending on current temperature. Usually heat makes them expand, and cold leads them to contract. To a first approximation, the change in length measurements of an object ("linear dimension" as opposed to, e.g., volumetric dimension) due to thermal expansion is related to temperature change by a "linear expansion coefficient". It is the fractional change in length per degree of temperature change.
14. (a) The movement of air (sometimes called turbulence) in the atmosphere of Earth causes a series of refractions which makes the starlight to get slightly bent as it travels from the distant star through the atmosphere down to us on the ground. This means that some of the light reaches us directly and some gets bent slightly away. To our eyes, this makes the star seem to twinkle.
15. (c) According to Newton's first law, an object that is at rest will stay at rest unless an unbalanced force acts upon it and an object that is in motion will not change its velocity unless an unbalanced force acts upon it. So

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the bomb carries the inertia of the aircraft and so has to be launched before the target so that it can hit it on time. Assuming the plane continues to fly straight forward, the plane will be directly over the target when the bomb hits.

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16. (b) The effect of scattering is inversely related to the fourth power of the wavelength of a colour. Red has the highest wavelength of all the colours and is able to travel the longest distance through fog, rain, and the alike.
17. (b) The reason that bats use ultrasound is because it has such a high frequency and it has a low diffraction or it bends less. They use this sound to do a couple of things like to catch their prey and also just to get around. The method of doing such tasks is called echolocation. They make a sound and wait for it to bounce back to hear it. If they hear it come faster in a particular area than the rest of the sounds then they know that something is near.
18. (c) Resolution is an umbrella term that describes the detail an image holds. The term applies to raster digital images, film images, and other types of images. The display resolution of a digital television, computer monitor or display device is the number of distinct pixels in each dimension that can be displayed.
19. (b) In telecommunications and signal processing, frequency modulation (FM) conveys information over a carrier wave by varying its instantaneous frequency. This contrasts with amplitude modulation, in which the amplitude of the carrier is varied while its frequency remains constant. In analogue television, the sound portion of a broadcast is invariably modulated separately from the video. Most commonly, the audio and video are combined at the transmitter before being presented to the antenna, but in some cases separate aural and visual antennas can be used.
20. (a) In an explosion, an internal impulse acts in order to propel the parts of a system (often a single object) into a variety of directions. After the explosion, the individual parts of the system (that is often a collection of fragments from the original object) have momentum. If the vector sum of all individual parts of the system could be added together to determine the total momentum after the explosion, then it should be the same as the total momentum before the explosion. Just like in collisions, total system

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momentum is conserved.

21. (d) The basic units or blocks of a microprocessor are ALU, an array of registers and control unit. A minimal hypothetical microprocessor might only include an arithmetic logic unit (ALU) and a control logic section. Each operation of the ALU sets one or more flags in a status register, which indicate the results of the last operation (zero value, negative number, overflow or others). অ্যাচিভার্স
22. (c) Galvanization is the process of applying a protective zinc coating to steel or iron, in order to prevent rusting. The term is derived from the name of Italian scientist Luigi Galvani. Although galvanization can be done with electrochemical and electro-deposition processes, the most common method in current use is hot-dip galvanization, in which steel parts are submerged in a bath of molten zinc.
23. (c) Hamburger shift (also known as the Chloride shift) is a process which occurs in the cardiovascular system and refers to the exchange of bicarbonate (HCO_3^-) and chloride (Cl^-) across the membrane of red blood cells. Carbon dioxide (CO_2) generated in tissues enters the blood and dissolves in water in the red blood cells to form carbonic acid (H_2CO_3), which then dissociates to form bicarbonate (HCO_3^-) and a hydrogen ion (H^+). Here, the exchange of bicarbonate for chloride in red blood cells flushes the bicarbonate from the blood and increases the rate of gas exchange. This chloride shift may also regulate the affinity of hemoglobin for oxygen through the chloride ion acting as an allosteric effector. অ্যাচিভার্স
24. (c) Magnesium hydroxide is an inorganic compound with the chemical formula $\text{Mg}(\text{OH})_2$. As a suspension in water, it is often called milk of magnesia because of its milk-like appearance. The solid mineral form of magnesium hydroxide is known as brucite. Magnesium hydroxide is a common component of antacids and laxatives; it interferes with the absorption of folic acid and iron. Magnesium hydroxide has low solubility in water, with a K_{sp} of 1.5×10^{-11} ; however all of the magnesium hydroxide that does dissolve dissociates.
25. (d) Quartz is an abundant mineral in the Earth's continental crust. It is made up of a continuous framework of SiO_4 silicon–oxygen tetrahedra, with each oxygen being shared between two tetrahedra, giving an overall formula SiO_2 . There are many different varieties of quartz, several of which are semiprecious gemstones. Most quartz used in microelectronics is produced synthetically. Large, flawless and un-twinned crystals are produced in an autoclave via the hydrothermal process. The process involves treating crushed natural quartz with hot aqueous solution of a base such as sodium hydroxide. অ্যাচিভার্স
26. (b) An isobar is a line of equal or constant pressure on a graph, plot, or map; an isopleth or contour line of pressure. More accurately, isobars are lines drawn on a map joining places of equal average atmospheric pressure reduced to sea level for a specified period of time. In meteorology, the barometric pressures shown are reduced to sea level, not the surface pressures at the map locations. The distribution of isobars is closely related to the magnitude and direction of the wind field, and can be used to predict future weather patterns.
27. (b) Bio gas is a clean unpolluted and cheap source of energy in rural areas. It consists of 55-70% methane which is inflammable. Bio gas is produced from cattle dung in a bio gas plant commonly known as gobar gas plant through a process called digestion. It helps in reducing the deforestation as it arrests for cutting of trees for firewood. It also helps in maintaining ecological balance, in rural sanitation and it needs Lower capital cost and almost cost free maintenance. অ্যাচিভার্স
28. (c) Ozone in the ozone layer filters out sunlight wavelengths from about 200 nm UV rays to 315 nm, with ozone peak absorption at about 250 nm. This ozone UV absorption is important to life, since it extends the absorption of UV by ordinary oxygen and nitrogen in air (which absorbs all wavelengths < 200 nm) through the lower UV-C (200 nm-280 nm) and the entire UV-B band (280 nm-315 nm). The small unabsorbed part that remains of UV-B after passage through ozone causes sunburn in humans, and direct DNA damage in living tissues in both plants and animals. অ্যাচিভার্স
29. (c) Soaps are made of materials found in nature. Detergents are synthetic. a big drawback of washing with soap is that the minerals in water react with those in soap, leaving an insoluble film. Detergents react less to minerals in water and for all practical purposes are the product of choice for laundry, unless you have very

soft water. On the other hand, soap will combine with the magnesium and calcium ions in hard water to create an insoluble residue that can clog drains and stick to clothing.

30. (b) India's domestic uranium reserves are small and the country is dependent on uranium imports to fuel its nuclear power industry. Since early 1990s, Russia has been a major supplier of nuclear fuel to India. Due to dwindling domestic uranium reserves, electricity generation from nuclear power in India declined by 12.83% from 2006 to 2008. Large deposits of natural uranium, which promises to be one of the top 20 of the world's reserves, have been found in the Tummalapalle belt in the southern part of the Kadapa basin in Andhra Pradesh in March 2011. প্র্যাচিভর্স
31. (b) Hydrogen is a chemical element with symbol H and atomic number 1. With an average atomic weight of 1.00794 u (1.007825 u for hydrogen-1), hydrogen is the lightest element and its monatomic form (H₁) is the most abundant chemical substance, constituting roughly 75% of the Universe's baryonic mass. Naturally occurring atomic hydrogen is rare on Earth because hydrogen readily forms covalent compounds with most elements and is present in the water molecule and in most organic compounds. প্র্যাচিভর্স
32. (d) Lithium has the highest specific heat capacity of any solid element. Because of its specific heat capacity, the highest of all solids, lithium metal is often used in coolants for heat transfer applications. It belongs to the alkali metal group of chemical elements. Under standard conditions it is the lightest metal and the least dense solid element. Like all alkali metals, lithium is highly reactive and flammable. For this reason, it is typically stored in mineral oil.
33. (b) carbon atoms in diamond are quaternary in nature. The crystal structure of a diamond is a face-centered cubic or FCC lattice. Each carbon atom joins four other carbon atoms in regular tetrahedrons (triangular prisms). Based on the cubic form and its highly symmetrical arrangement of atoms, diamond crystals can develop into several different shapes, known as 'crystal habits'. প্র্যাচিভর্স
34. (c) Alizarin or 1, 2-dihydroxyanthraquinone (also known as Mordant Red 11 and Turkey Red is an organic compound with formula C₁₄ H₈ O₄ that has been used throughout history as a

prominent red dye, principally for dyeing textile fabrics. Historically it was derived from the roots of plants of the madder genus. In 1869, it became the first natural pigment to be duplicated synthetically. Alizarin is the main ingredient for the manufacture of the madder lake pigments known to painters as Rose madder and Alizarin crimson. Alizarin in the most common usage of the term has a deep red colour, but the term is also part of the name for several related non-red dyes, such as Alizarine Cyanine Green and Alizarine Brilliant Blue. প্র্যাচিভর্স

35. (b) There are various grades of gold purity, determined by the ratio of their alloy composition and rated by a karat system. Typical karat purities range from 10 karats to 24 karats (pure gold), with a wide variation of usage from country to country. 18 karat gold consists of 75% gold and 25% alloy metals. 18 karat gold has been found to be the perfect balance between gold purity and strength. Brilliance offers a variety of exquisite 18 karat gold jewelry.
36. (a) Diamond is harder than graphite because diamond has a more complex structure. Diamond's structure is like many pentagons connected together, each pentagon sharing a side with another pentagon or each pentagon sharing a point with another pentagon. All the points are linked together in some way. Graphite's structure is very loose, with its bonds forming layers. There will be one sheet of elements bonded together, but then another sheet of bonds of elements will lay on top of that, and there will be very weak bonds holding those sheets together.
37. (b) Sodium bicarbonate or sodium hydrogen carbonate is the chemical compound with the formula NaHCO₃. Sodium bicarbonate is a white solid that is crystalline but often appears as a fine powder. It has a slightly salty, alkaline taste resembling that of washing soda (sodium carbonate). The natural mineral form is nahcolite. It is a component of the mineral natron and is found dissolved in many mineral springs. প্র্যাচিভর্স
38. (a) Saccharin can be produced in various ways. The original route by Remsen & Fahlberg starts with toluene. Saccharin is an artificial sweetener. The basic substance, benzoic sulfilimine, has effectively no food energy and

is much sweeter than sucrose, but has a bitter or metallic aftertaste, especially at high concentrations. It is used to sweeten products such as drinks, candies, cookies, medicines, and toothpaste.

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39. (b) Polyvinyl chloride is produced by polymerization of the monomer vinyl chloride (VCM). Polyvinyl chloride, commonly abbreviated PVC, is the thirdmost widely produced plastic, after polyethylene and polypropylene. PVC is used in construction because it is cheaper and stronger than more traditional alternatives such as copper or ductile iron. It can be made softer and more flexible by the addition of plasticizers, the most widely used being phthalates. In this form, it is used in clothing and upholstery, electrical cable insulation, inflatable products and many applications in which it replaces rubber.
40. (d) Aquaculture: farming of aquatic organisms such as fish, crustaceans, molluscs and aquatic plants; Floriculture: cultivation of flowering and ornamental plants for gardens and for floristry; Sericulture: rearing of silkworms for the production of raw silk; and Viticulture: production and study of grapes.
41. (a) Rheumatic heart disease is heart valve damage that occurs after an episode of rheumatic fever. To reduce inflammation, aspirin, steroids, or nonsteroidal medications may be given. Aspirin in antiinflammatory doses effectively reduces all manifestations of the disease except chorea, and the response is typically dramatic.
42. (b) An analgesic is any member of the group of drugs used to achieve analgesia, relief from pain. Commonly known as painkillers, analgesic drugs act in various ways on the peripheral and central nervous systems.
43. (a) Tobacco smoke contains carbon monoxide which is a poisonous gas. It interferes with uptake of oxygen in the lungs and with its release from the blood to the tissues that need it. When carbon monoxide is inhaled it combines with haemoglobin in the blood to form carboxyhaemoglobin, which reduces the amount of oxygen available to the body's vital organs. Oxygen levels may be reduced by as much as 15%.
44. (b) Saliva does not increase the number of red blood cells in the body which is a condition of disease called Polycythemia. It results in an increased level of circulating red blood cells in the bloodstream.
45. (c) The components of dietary fiber include cellulose, lignin (only non-carbohydrate component of dietary fiber), pectin, chitan, etc. Such fibers increase fecal bulk and speed up the passage of food through the digestive tract.
46. (c) The tests employed to detect commonly present abnormal constituents are proteins, glucose, ketone bodies, bile pigments, bile salts and blood. The liver synthesizes a type of protein known as albumin. Urine should not contain albumin, as protein molecules are large and so easily get trapped in the kidney's filters and finally they are reabsorbed in the blood stream.
47. (b) All plants need nitrogen to make amino acids, proteins and DNA, but the nitrogen in the atmosphere is not in a form that they can use. Plants use nitrogen by absorbing either nitrate or ammonium through the roots.
48. (c) The open circulatory system is common to mollusks and arthropods. Open circulatory systems pump blood into a hemocoel with the blood diffusing back to the circulatory system between cells. Blood is pumped by a heart into the body cavities, where tissues are surrounded by the blood. Cockroaches and silverfish have an open circulatory system. They don't have any blood vessels.
49. (d) Lysosomes are known by names such as suicidal bags/atom bomb and House keeper scavenger of cell. They are called suicide bags or atom bombs because if the single membrane surrounding the digestive enzyme breaks, the enzymes released may also destroy the cell itself.
50. (d) Lysosomes are known as digestive bag because it digest every foreign material as well as worn out cell organelles. They contain powerful digestive enzymes which are capable of breaking down all organic materials.
51. (a) An osteocyte, a star shaped cell, is the most commonly found cell in mature bone, and can live as long as the organism itself. Osteocytes are networked to each other via long cytoplasmic extensions that occupy tiny canals called canaliculi, which are used for exchange of nutrients and waste through gap junctions. The space that an osteocyte occupies is called a lacuna.
52. (d) An allosome is a sex chromosome that differs from an ordinary autosome in form, size, or behavior. The human sex chromosomes are a

- typical pair of allosomes. The X chromosome is present in the ovum, while either X or Y chromosomes can be present in sperm.
53. (d) At present, the IUCN Red List of Threatened Species (also known as the Red Data List) lists eight classes of organism under the group of "threatened categories" of endangered; critically endangered, The classes of organism for which the 'threatened' tag is applied are: mammals; birds; reptiles; amphibians; fishes; insects; mollusks; and plants. অ্যাচিভর্স
54. (b) Bile is a bitter-tasting, dark green to yellowish brown fluid, produced by the liver that aids the process of digestion of lipids in the small intestine.
55. (b) Strontium-90 is a radioactive isotope of strontium produced by nuclear fission. Used mostly in weapons and nuclear power plants, poisoning usually occurs through accidental ingestion. Studies have also linked strontium-90 to various forms of skin cancer in cases where the radiation was absorbed through the skin. অ্যাচিভর্স
56. (d) Plaster of Paris is a plaster made by calcining gypsum. It can be used to impregnate gauze bandages to make a sculpting material called modroc. It is used similarly to clay, as it is easily shaped when wet, yet sets into a resilient and lightweight structure. This is the material which was (and sometimes still is) used to make classic plaster orthopedic casts to protect limbs with broken bones.
57. (b) Pernicious anemia is one of many types of the larger family of megaloblastic anemias. It is caused by loss of gastric parietal cells which are responsible, in part, for the secretion of intrinsic factor, a protein essential for subsequent absorption of vitamin B₁₂ in the ileum. অ্যাচিভর্স
58. (a) Eucalyptus regnans is the tallest of all flowering plants, and possibly the tallest of all plants, although no living specimens can make that claim. The tallest measured living specimen, named Centurion, stands 101 metres tall in Tasmania. অ্যাচিভর্স
59. (d) Leishmaniasis (Kala azar) is a disease spread by the bite of the female sand fly. This disease is the second-largest parasitic killer in the world (after malaria). The parasite migrates to the internal organs such as liver, spleen (hence 'visceral'), and bone marrow, and, if left untreated, will almost always result in the death of the host.
60. (b) The deficiency of magnesium leads to yellowish green blotch near the base of the leaf between the midrib and the outer edge. The yellow area enlarges until the only green remaining is at the tip and base of the leaf as an inverted V-shaped area on the midrib. অ্যাচিভর্স
61. (d) Itai-itai disease was the documented case of mass cadmium poisoning in Toyama Prefecture, Japan, starting around 1912. The cadmium poisoning caused softening of the bones and kidney failure. The disease is named for the severe pains caused in the joints and spine.
62. (a) Cross fertilization occurs in Hydra. The spermatozoa released from the testis of one Hydra swim about in water with their tails and finally come into contact with the ovum of another Hydra. Only one spermatozoon penetrates the ovum and fertilizes it. This results in the formation of a zygote which is diploid.
63. (b) Blubber is a thick layer of vascularized adipose tissue found under the skin. Lipid-rich, collagen fiberlaced blubber comprises the hypodermis and covers the whole body, except for parts of the appendages, strongly attached to the musculature and skeleton by highly organized, fan-shaped networks of tendons and ligaments. It can comprise up to 50% of the body mass of some marine mammals during some points in their lives. অ্যাচিভর্স
64. (c) Test tube baby is born from in vitro fertilization. In vitro fertilization (IVF) is a process by which an egg is fertilized by sperm outside the body: in vitro. When a woman's natural cycle is monitored to collect a naturally selected ovum (egg) for fertilization, it is known as natural cycle IVF. The fertilized egg (zygote) is then transferred to the patient's uterus with the intention of establishing a successful pregnancy.
65. (c) Silk is a natural protein fibre, some forms of which can be woven into textiles. The protein fibre of silk is composed mainly of fibroin and produced by certain insect larvae to form cocoons. The best-known type of silk is obtained from the cocoons of the larvae of the mulberry silkworm Bombyx mori. অ্যাচিভর্স
66. (b) Calciferol (Vitamin D); Tocopherols and tocotrienols (Vitamin E); Phylloquinone, menaquinones (Vitamin K); and Retinol, retinal,

and four carotenoids including beta carotene (Vitamin A) are all fat soluble vitamins.

67. (d) Monotremes are mammals that lay eggs instead of giving birth to live young like marsupials and placental mammals. The only surviving examples of monotremes are all indigenous to Australia and New Guinea, although there is evidence that they were once more widespread. Among living mammals they include the platypus and four species of echidnas (or spiny anteaters). অ্যাচিভার্স
68. (b) Chameleons have specialized cells, chromatophores, which contain pigments in their cytoplasm, in three layers below their transparent outer skin. Dispersion of the pigment granules in the chromatophores sets the intensity of each color. When the pigment is equally distributed in a chromatophore, the whole cell is intensively colored. When the pigment is located only in the centre of the cell, the cell appears mainly transparent.
69. (b) A goitre or goiter is a swelling of the thyroid gland which can lead to a swelling of the neck or larynx (voice box). Goitre is a term that refers to an enlargement of the thyroid and can be associated with a thyroid gland that is functioning properly or not. Worldwide, over 90% cases of goitre are caused by iodine deficiency.
70. (a) Meat, fish and eggs are the richest sources of protein. An ounce of meat or fish has approximately 7 grams of protein. A large egg contains 6 grams protein. অ্যাচিভার্স
71. (c) A heart attack occurs when blood flow to a part of your heart is blocked for a long enough time that part of the heart muscle is damaged or dies. The medical term for this is myocardial infarction. Most heart attacks are caused by a blood clot that blocks one of the coronary arteries. The coronary arteries bring blood and oxygen to the heart. If the blood flow is blocked, the heart is starved of oxygen and heart cells die. অ্যাচিভার্স
72. (a) Drones are male honey bees. They develop from eggs that have not been fertilized, and they cannot sting, since the worker bee's stinger is a modified ovipositor (an egg laying organ).
73. (d) The chromosomes which determine the sex (maleness or femaleness) of an individual in sexually producing organisms are called sex chromosomes or allosomes or idiosomes. In humans an individual whose cells contain XX chromosomes (homo or isogametic) becomes a female, while one whose cells contains XY chromosomes (heterogametic) becomes a male.
74. (b) Swim bladder is also known as air bladder for fishes. It is a buoyancy organ possessed by most bony fish. The swim bladder is located in the body cavity and is derived from an out-pocketing of the digestive tube. It contains gas (usually oxygen) and functions as a hydrostatic, or ballast, organ, enabling the fish to maintain its depth without floating upward or sinking. It also serves as a resonating chamber to produce or receive sound.
75. (c) Cauliflowers are characterized mainly by their heart which consists of an inflorescence composed of numerous undeveloped flowers that gather around a central axis. Cauliflower and broccoli are grown for their large, edible, very young inflorescence. অ্যাচিভার্স
76. (a) Acid rain is caused due to oxides of sulphur and nitrogen mixing with rain water making rain water acidic. When calcium carbonate of white marble reacts with acidic water, it results into its corrosion. This is known as stone cancer. Our heritage monuments, like the Taj Mahal, are threatened by stone cancer.
77. (c) Keratin is a fibrous protein making up most cells found in our nails and hair and the epidermis layer of our skin. It also makes up fish scales and crustacean shells, bird feathers and beaks, and animal horns and hooves.
78. (a) Edible plant stems are one part of plants that are eaten by humans. Most plants are made up of roots, stems, leaves, flowers, buds and produce fruits containing seeds. The edible portion in an onion is swollen leaves with a bit of stem. অ্যাচিভার্স
79. (a) Haemoglobin has greatest affinity for oxygen with which it binds readily. The oxygen binding properties of hemoglobin exist because of the interaction between oxygen and the iron atom of the heme groups and hemoglobin's quaternary structure.
80. (c) A chromosome is an organized structure of DNA and protein found in cells. It is a single piece of coiled DNA containing many genes, regulatory elements and other nucleotide sequences. Chromosomes also contain DNA-bound proteins, which serve to package the DNA and control its functions. অ্যাচিভার্স

81. (a) Union Minister for Health & Family Welfare Dr Harsh Vardhan launched a book titled “My Joys and Sorrows – as a Mother of a Special Child”, written by the author Dr Krishna Saksena. প্র্যাচিভর্স
82. (d) American Actor, rapper, and producer Will Smith, is set to publish his first memoir titled “Will” in November 2021.
83. (d) Former Asian Games gold medalist boxer Ngangom Dingko Singh from Manipur, passed away due to cancer. He was conferred the Arjuna Award in 1998 and Padma Shri in 2013.
84. (a) National award-winning Bengali film director and poet, Buddhadeb Dasgupta passed away at 77 in Kolkata, West Bengal.
85. (c) World No Tobacco Day (WNTD) is observed every year around the world on 31st May to spread awareness about the dangers of using tobacco. According to the World Health Organization (WHO), tobacco kills more than 8 million people every year around the world. i.Theme of WNTD 2021 is “Commit to Quit”
86. (a) A Team of zoologists headed by Dr Ranjana Jaiswara of the Zoology Department of Punjab University have discovered a new species of Spider Cricket called “Jayanti” in the Kurra caves of Chhattisgarh. প্র্যাচিভর্স
87. (d) Gujarat Chief Minister Vijay Rupani launched ‘e-Nirman’ portal and its mobile App for Unorganised Sector Workers. The portal facilitates online registration & distribution of smart cards to the unorganised sector workers for availing various welfare schemes.
88. (b) Government of Punjab launched the special mobile app “Khedo Punjab” to make the sports department and all sportspersons of the state of Punjab available on the digital platform. Through this digital platform the players can register themselves with their sport of interest and locate the game wise coaching centres across the various regions of Punjab.
89. (c) On occasion of the International Day Against Drug Abuse and Illicit Trafficking (26th June), Union Minister for Social Justice & Empowerment Thawar Chand Gehlot launched a website for the Nasha Mukta Bharat Abhiyan (NMBA) scheme to root out the threat of drug abuse. NMBA or ‘Drugs-Free India Campaign’ was launched on 15th August, 2020 across 272 districts most vulnerable for drug usage.
90. (a) On 28th June 2021, Barun Mitra, Secretary at Department of Justice launched the “Enforcing Contracts Portal” that is aimed at improving the Ease of Doing Business (EoDB) in India. Department of Justice under the Ministry of Law and Justice, is the nodal agency responsible for all policy reforms on “Enforcing Contracts”. প্র্যাচিভর্স
91. (d) Indian Coast Guard (ICG) conducted “Operation Sagar Aaraksha II” to assist Sri Lankan Navy in Extinguishing fire on the MV X-Press Pearl Container Vessel. ICG’s specialised pollution response vessel Samudra Prahari and offshore patrol vessel Vajra participated in the operation to extinguish fire from the container vessel which was carrying highly inflammable chemicals.
92. (d) Delhi’s Indira Gandhi International Airport was the 1st Carbon Neutral Airport in Asia Pacific Region.
93. (c) The Indian Council of Agricultural Research (ICAR)-Indian Institute of Spices Research (IISR) received a patent for Black Pepper micronutrient foliar formulation. ICAR-Indian Institute of Spices Research (IISR) is located at Kozhikode, Kerala. প্র্যাচিভর্স
94. (d) PayNearby, India’s largest Hyperlocal fintech startup, in collaboration with IndiaFirst Life Insurance Company, launched first of its kind, a cost-effective, 3-in-1 insurance solution (Life, Health & Disability) named ‘Poorna Suraksha’ to safeguard its Retail Partners during the COVID-19 and beyond.
95. (c) The National Medicinal Plant Board (NMPB) and the National Botanical Research Institute (CSIR-NBRI) have signed an MoU for the promotion of cultivation and production of medicinal plants and herbs in India. Objective: To facilitate the development of Quality Planting Material of medicinal plants and herbs identified by the NMPB. প্র্যাচিভর্স
96. (b) Energy Efficiency Services Ltd (EESL), under the Ministry of Power, signed an MoU with Metallurgical & Engineering Consultants (MECON) Ltd, under the Ministry of Steel, to implement Energy Efficient & Clean energy solutions in the Steel & Mining Industries.
97. (c) The Ministry of Culture (MoC) signed an MoU with the Ministry of Ports, Shipping and Waterways (MoPSW) for Cooperation in Development of National Maritime Heritage Complex (NMHC) at Lothal, Gujarat. NHMC is India’s first of its kind facility dedicated to the legacy of Maritime Heritage of India.

98. (b) India's H-Energy signed an MoU with Petrobangla, a government-owned national oil company of Bangladesh for supply of R-LNG (Regasified-Liquefied Natural Gas) to Bangladesh. H-Energy will supply LNG to Bangladesh via the 250 km 'Kanai Chatta (West Bengal) – Shirampur (Bangladesh) Natural Gas Pipeline', which is expected to be commissioned in 2023.

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99. (b) US-based electric vehicles major Triton Electric Vehicle Pvt. Ltd entered into an MoU with the Telangana government for setting up of a Rs 2,100 Crore manufacturing unit for electric vehicles in Zaheerabad, Telangana. ଅପ୍ରେଲ ୨୦୨୩

100. (c) Jagannath Bidyadhar Mohapatra (J B Mohapatra), a 1985-batch Indian Revenue Service officer, was appointed as the interim chairman of Central Board of Direct Taxes (CBDT).

