Answer Sheet With Explanation

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CIVIL SERVICES PRELIMINARY EXAM

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A

Test Booklet Code: 190 Test Booklet No: 734992 Total Ques: 100

1 C
Ex.

2 C
Ex.

3 D
Ex. Burning biomass emits large amounts of pollutants like burning other solid fuels such as coal. Burning organic material emits Particulate Matter (PM), Nitrogen Oxide (NO_X), Carbon Monoxide (CO), Sulphur Dioxide (SO_2), Lead (Pb) Mercury and hazardous air pollutants.

4 D
Ex.

5 B
Ex.

6 A
Ex.

7 A
Ex. Cas9 protein has been in news for its property of being molecular scissors used in targeted gene editing. It is also known as CRISPR associated protein 9. It is heavily utilised in genetic engineering application's. It's main function is to cut DNA. So it can alter cells genome. It plays an important role in the immunological defense of certain bacteria against DNA viruses.

8 D
Ex.

9 D
Ex.

10 B
Ex.

11 C
Ex. * ATP is the energy currency for most cellular processes. The energy released during the process of cellular respiration is used to make an ATP molecule from ADP and inorganic phosphate.
* Endothermic processes (processes that consume energy) in the cel then use this ATP to drive the reactions. When the terminal phosphate linkage in ATP is broken using water, the energy equivalent to 30.5 kJ/mol is released.
* Hence, both the statements are correct.

12 A
Ex.

13 D
Ex.

14 C
Ex. India successfully conducted its first anti-satellite (ASAT) missile test on 27 March, 2019 destroying low earth orbit satellite in space by using a missile that covered a distance of 300 km to engage the target. Let us tell you that India became the fourth country to acquire such type of modern capability. The codename of ASAT is Mission Shakti.

15 B
Ex.

16 B
Ex. * Femur is the thigh bone. It is the longest and strongest bone in the human body.
* The sternum or breastbone is a long flat bone located in the central part of the chest. It connects to the patella, also known as the kneecap, is a thick, circular-triangular bone which articulates with the femir (thigh bone) and covers and protects the anterior articular surface of the knee joint.

17 A
Ex.

18 D
Ex.

19 C
Ex. The Kerala State Aids Control Society (KSACS) announced to reserve a government job for HIV positive candidates. A vacancy has been reserved in the office of KSACS for HIV positive candidates for the post of coordinator. The reason behind is that the presence of such a person will improve coordination and communication with groups at risk and ensure effective prevention.

20 D
Ex.

21 A
Ex.

22 D
Ex.

23 B
Ex.

24 D
Ex.

25 A
Ex. Vitamins fall into two categories:
* Water-solube vitamins - C and the B-complex vitamins (such as vitamins B6, B12, niacin, riboflavin, and folate) - need to dissolve in water before your body can absorb them. Because of this, your body can't store these vitamins. Any vitamin C or B that your body doesn't use as it passes through the human body is lost. So one needs a fresh supply of these vitamins every day.
* Fat-solube vitamins - A, D, E, and K - dissolve in fat and can be stored in your body.

26 C
Ex.

27 B
Ex.

28 C
Ex.

29 B
Ex.

30 A
Ex.

31 C
Ex.

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32 D

Ex. China is world's largest manufacturer of silicon wafers used in photovoltaic units. As entrusted by the Electricity Act, 2003, Central Electricity Regulatory Commission (CERC), is designated as a key regulator of pwoer sector in India which determines the solar power tariffs.

33 A

Ex.

34 D

Ex.

35 D

Ex. In tissue culture, new plants are grown by removing tissue or separating cells from the growing tip of a plant. The cells are then placed in an artificial medium where they divide rapidly to form a small group of cells or callus. The callus is transferred to another medium containing hormones for growth and differentiation. The plantlets are then placed in the soil so that they can grow into mature plants. Using tissue culture, many plants can be grown from one parent in disease-free conditions. This technique is commonly used for ornamental plants.
Hence, all the statements are correct.

36 C

Ex.

37 A

Ex. The recipients of the Nobel Prize in Chemistry 2019 are John B. Goodenough, M. Stanley Whittingham and Akira Yoshino for the development of lithium-ion batteries. Do you know that this lightweight, rechargeable and powerful battery can be used in mobile phones to laptops, electric vehicles? Not only this, it can even store significant amounts of energy from solar and wind power, making possible a fossil fuel-free society.

38 C

Ex.

39 B

Ex.

40 B

Ex.

41 B

Ex.

42 D

Ex. Bipolar Disorder is a mental health condition in which patients undergo intense mood shifts that oscillate between depression and elevated moods. After researching, scientists found that such patients carry some residual impairment in terms of processing of information even in their 'normal' phases. The study has been done by jointly researchers from the National Institute of Mental Health and Neuroscience (Nimhans), Bengaluru and All India Institute of Medical Sciences, New Delhi.

43 A

Ex. satellite was launched by Nepal successfully from Virginia in the United States on 18 April, 2019. Its aim is to gather detailed geographical information of the Himalayan nation.

44 D

Ex.

45 C

Ex. Polytetrafluoroethene (Teflon): Teflon is manufactured by heating tetrafluoroethene with a free radical or persulphate catalyst at high pressures. It is chemically inert and resistant to attack by corrosive reagents.
It is used in making oil seals and gaskets and also used for non - stick surface coated utensils.
Other advantage of Teflon is its versatility, and the range of applications over so many products and different industries for this material is staggering. The use of teflon can have massive benefits in manufacturing and engineering, not just in making tubes or liners for handling or storing corrosive chemicals, but by coating parts such as bearings or screws to increase the lifetime of both the parts themselves and the machinery they are part of. Hence statement 1 and 2 are correct.

46 A

Ex.

47 C

Ex. A plane mirror is a mirror with a flat and smooth reflecting surface. Reflection from a smooth surface like that of a mirror is alled regular reflection. Images are formed by regular reflection.
* The image formed by a plane mirror is erect.
* It is virtaul (cannot be obtained on a screen) and is of the same size as the object. This is because the light rays do not actually pass through the image. So, it cannot be focused on a screen placed at the location where the image is.
* The image is at the same distance behind the mirror as the object is in front of it.
* The left side of the object is seen on the right side in the image, and right side of the object appears to be on the left side in the image. This is known as lateral inversion.

48 B

Ex.

49 D

Ex.

50 B

Ex.

51 A

Ex.

52 A

Ex. * Arteries are the vessels which carry blood away from the heart to various organs of the body. Since the blood emerges from the heart under high pressure, the arteries have thick, elastic walls.
* Veins collect the blood from different organs and bring it back to the heart. They do not need thick walls because the blood is no longer under pressure, instead they have valves that ensure that the blood flows only in one direction.
* Hence, only statement I is correct.

53 D

Ex.

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54 D

Ex. The 'Additional Protocol' is not a stand-alone agreement, but rather a protocol to a safeguards agreement that provides additional tools for verification. In particular, it significantly increases the IAEA's abiilty to verify the peaceful use of all nuclear materials in states with comprehensive safeguards agreement. With the signing of additional protocol with IAEA, the civilian nuclear reactor comes under IAEA safeguards.

55 C

Ex. Terminal High Altitude Area Defense (THAAD), formerly Theater High Altitude Area Defense, is an American anti-ballistic missile defense system designed to shoot down short, medium, and intermediate-rangle ballistic missilies in thier terminal phase (descent or re-entry) by intercepting with a hit-to-kill approach.

56 C

Ex.

57 B

Ex.

58 C

Ex. Hydrogen fuel cell is a fuel cell that combines hydrogen and oxygen to produce electricity with water and steam as the only by products. It is a climate frinedly fuel as it does not emit carbon dioxide or particulate matter as the case with conventional fuels like diesel, coal etc. Hence, both the statements are correct.

59 A

Ex.

60 D

Ex.

61 A

Ex.

62 D

Ex.

63 A

Ex.

64 D

Ex.

65 B

Ex. In a recent development, scientists have found particles of a rare of iron (Fe-60) in Antarctica snow. It is believed that they have been originated from nearby supernovae. It will help in understanding the structure and origin of interstellar dust clouds, according to scientists.

66 D

Ex.

67 A

Ex.

68 C

Ex.

69 C

Ex.

70 C

Ex.

71 B

Ex.

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72 D

Ex.

73 B

Ex.

74 D

Ex.

75 B

Ex.

76 A

Ex. is the second mission to the moon which was launched on 22 July, 2019 by India's Geosynchronous Satellite Launch Vehicle (GSLV Mk III). It reached lunar orbit on 19 August, 2019. Despite the crash-landing of the Lander, ISRO confirmed that all the instruments are onboard the orbiter and are working well.

77 C

Ex.

78 B

Ex.

79 A

Ex.

80 C

Ex.

81 A

Ex. Carbofuran, methyl parathion, phorate and triazophos chemicals are used as pesticides in India to control insects in a wide variety of field crops.

Carbofuran is one of the most toxic carbamate (drived from carbamic acid) pesticides.

Parathion or methyl parathion has been banned in various countries due to its high toxicity to humans.

Triazophos is a chemically toxic insecticide which could lead to headaches, blurred vision, dizziness etc., in humans. Phorate is also a highly toxic chemical compound, used as an insecticide.

82 B

Ex.

83 C

Ex.

84 D

Ex.

85 A

Ex.

86 C

Ex.

87 D

Ex.

88 B

Ex.

89 C

Ex. Elements vary in abundance. Among metals, aluminium is the most abundant. It is the third most abundant element in earth's crust (8.3% approx. by weight). It is a major component of many igneous minerals including mica and clays. Many gemstones are impure forms of Al_2O3 and the impurities range from Cr (in 'ruby') to Co (in 'sapphire'). Hence statement 1 is correct.

For the purpose of extraction, bauxite is chosen for aluminium. Hence statement 2 is correct.

90 D
Ex.

91 D
Ex. On 14 September 2019, Russia's world first floating nuclear power plant has been completed. It is about 5,000 kilometre (3,100 miles) Arctic transfer to the country's far east. The floating nuclear power plant named 'The Akademik Lomonosov'. It will start operating by the end of the year from Pevek, the autonomous district of Chukotka. It will provide energy for around 1, 00,000 people and also power oil platforms.

92 B
Ex. Augmented Reality is a technology where the objects that reside in the real world are enhanced by computer-generated perceptual information. It allows individuals to be present in the world and improves the experience using the camera of smartphone or PC.
Virtual reality is the use of computer technology to craete a simulated environment. It immeres the user by making them feel like they are experiencing simulated reality. It replaces the user's real world environment with a simulated one. Its applications include entertainment and educational purposes.

93 A
Ex. The satellites of NASA had discovered 'First Nearby Super-Earth'. It is a planet that could possibly support life. The team of International Astronomers announced their findings in the publication Astronomy and Astrophysics. The new discovery is known as an exoplanet. It is basically a planet that orbits a star outside of our solar system.

94 D
Ex.

95 D
Ex. Zika virus was first detected in Uganda in 1947 by the scientists when they were researching on yellow fever. Zika Virus was named after the Zika Forest of Uganda. In the local language word, Zika means overgrown. In the research, scientists came across a different and apparently harmless virus transmitted by mosquitoes to monkeys and they named it as Zika.

96 D
Ex.

97 B
Ex.

98 A
Ex.

99 C
Ex.

100 A
Ex.

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