

Science and Technology

Q.1) Which of the following are the advantages of Voice Over Internet Protocol (VOIP)?

1. Cost of calling is cheaper than normal phone call.
2. No need to carry a dedicated calling device if there is a computer.
3. It does not require internet connectivity to make the call.

Select the code from following:

- a) 1 and 2
- b) 2 and 3
- c) 1 and 3
- d) All of the above

Q.2) Which of the following correctly explains WiMAX?

- a) Wide Area Network for Maximum Access
- b) Worldwide Interoperability for Microwave Access.
- c) Worldwide interoperability for Maximum Internet Access
- d) Wide Microwave Access

Q.3) In Li – Fi technology, data is transmitted between the devices using spectrum of

- a) Radiowaves
- b) Microwaves
- c) Lightwaves
- d) Infrared Radiations

Q.4) What is 'Reserve Price' in the context of Spectrum Auction?

- a) It is the amount reserved for PSUs to make them competitive in the market.
- b) It is the maximum price over which a company cannot bid.
- c) It is the amount that the government has to pay to compensate if entire spectrum is not sold.
- d) It is the minimum price set by the government from which the auction starts

Q.5) Which of the following is not a type of Multiplexing?

- a) Code Division Multiple Access
- b) Frequency Division Multiple Access
- c) Time Division Multiple Access
- d) Amplitude Division Multiple Access

Q.6) Fiber-optic communication is a method of transmitting information from one place to another using Optical Fiber. Which of the following statements is/are correct regarding this?

1. Data is transferred by sending pulses of light.
2. Signals are transferred through the process of Total Internal Reflection.
3. It is immune to electromagnetic interference.

Select the code from following:

- a) 1 and 2
- b) 2 and 3
- c) 1 and 3
- d) All of the above

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Q.7) Which of the following statements are correct regarding RFID tags?

1. These tags contain electronically stored information.
2. Unlike a barcode, the tag need not be within the line of sight of the reader
3. RFID provides a way for organizations to identify and manage stock, tools and equipment (asset tracking), etc. without manual data entry.

Select the code from following:

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

Q.8) Which of the following statements are correct regarding the 'Mystic' Programme?

1. It is a terrorist surveillance project of India to record 100% foreign country's phone calls.
2. The calls are stored in a database code named NUCLEON and can be retrieved at a later date using a code named RETRO.

Select the code from following:

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Q.9) Tarang Sanchar Portal has been developed by the Department of Telecommunications. Which of the following statements regarding Tarang Sanchar Portal are correct?

- a) It is an app which updates the users about the availability of network in their regions.
- b) It informs public regarding electromagnetic radiations dissipated by communication towers and allays the health concerns of the public regarding their harmful effects.
- c) It is an app which updates public about completion of Optical fiber network project in their area
- d) It is an app to gather feedback from the public regarding the speed of the network and connectivity in a region.

Q.10) Which of the following missiles are not developed under Integrated guided missile development programme?

- a) Prithvi
- b) Agni
- c) Astra
- d) Nag

Q.11) Consider the following statements

1. It is a medium-range ramjet supersonic cruise missile that can be launched from submarine, ships, aircraft, or land.

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- It is the world's fastest anti-ship cruise missile in operation.
- It is also the fastest cruise missile in the world.

Which of the following is being referred to here?

- BrahMos missile
- Prithvi Air defence
- Agni IV
- Nirbhay

Q.12) India recently completed the successful development of beyond visual range air to air missile. Which among the following is that missile?

- Akash
- Astra
- Dhanush
- Prahaar

Q.13) Consider the following statements

- It has the same orbital period as the rotation of the earth on its own axis.
- It does not have any inclination with the earth's equator
- Ground antennas need not track the movement of the satellite as it hovers at a fixed position in the sky

Which of the following satellites is being referred to here?

- Geosynchronous satellite
- Geostationary satellite
- Polar sun synchronous satellite
- Heliocentric satellite

Q.14) Consider the following statements about cryogenic engine

- It has both fuel and oxidizer stored in liquid form.
- India is the 4th country in the world to have mastered this technology.

Choose the correct code

- 1 only
- 2 only
- Both 1 and 2
- None of the above

Q.15) Consider the following statements regarding James Webb space telescope scheduled to be launched in 2021.

- It is developed in collaboration between NASA, CSA and ROSCOSMOS.
- It will be placed around Lagrange point 1 in space.

Choose the correct code

- 1 only
- 2 only
- Both 1 and 2
- None of the above

Q.16) Which one of the following diseases is not caused by virus?

- Measles
- Chicken pox
- Typhoid
- Polio

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Q.17) Which of the following statements regarding INS Arihant are correct?

1. It is India's First indigenously built submarine.
2. It was jointly developed by the Indian Navy, Bhabha Atomic Research Centre (BARC) and Defence Research and Development Organisation (DRDO).

Select the code from following:

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Q.18) Which of the following statements are correct regarding Scorpene class Submarine?

1. It is designed to operate in all theatres including tropics.
2. The hull form, fin and hydroplanes are specifically designed to produce minimum underwater resistance.
3. The attacks can be carried out with torpedoes both while submerged or on the surface
4. Scorpene submarines can undertake various missions such as anti-surface warfare, anti-submarine warfare, intelligence gathering, mine laying and area surveillance.

Select the code from following:

- a) 1,2 and 3
- b) 2,3 and 4
- c) 1,3 and 4
- d) All of the above

Q.19) Rudra – an indigenously developed helicopter made its maiden appearance in the republic day parade this year. Which of the following statements are correct regarding Rudra?

1. It is a two engine helicopter and can fly even in case of one engine failure.
2. It is fitted with Self Protection Suite consisting of Radar/Laser Missile warning systems and Countermeasures dispensing system.
3. It is an armed helicopter and can also be used in specific missions like surgical strikes on enemy territories.

Select the code from following:

- a) 1 and 2
- b) 2 and 3
- c) 1 and 3
- d) All of the above

Q.20) Which of the following statements are correct regarding Border Security Force (BSF) of India?

1. BSF is a paramilitary force responsible for guarding India's land border during peace time and preventing transnational crime.
2. It functions under the administrative control of Ministry of Defence.
3. BSF is the only Central Armed Police force to have its own Air Wing, Marine Wing and artillery regiments.

Select the code from following:

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- a) 1 and 2
- b) 2 and 3
- c) 1 and 3
- d) All of the above

Q.21) China recently successful tested Xingkong – 2. It is a waverider flight vehicle. What is a waverider flight vehicle?

- a) It is flight vehicle that flies in the atmosphere and uses shockwaves generated by its own hypersonic flight
- b) It is a flight vehicle which flies against the upper atmospheric winds
- c) It is a flight vehicle which can fly in outer space using solar winds
- d) None of the above

Q.22) ISRO recently successfully conducted the ground test of High Thrust version of Vikas Engine. Which of the following statements regarding Vikas Engine are correct?

- 1. It is a solid fuel cryogenic rocket engine.
- 2. It can be used only for the propulsion of GSLV Mk III launch vehicle.

Select the code from following:

- a) 1 only
- b) 2 only
- c) Both 1 and 2

- d) Neither 1 nor 2

Q.23) 'RemoveDebris' is an EU (European Union) Framework 7 (FP7) research project to develop and fly a low cost in-orbit demonstrator mission that aims to de-risk and verify technologies needed for future ADR (Active Debris Removal) missions. Which of the following processes is it using to identify and remove debris?

- 1. A debris capture system based on a Net
- 2. A debris capture system based on a Harpoon
- 3. Visual Based Navigation (VBN) using Optical, Infrared and LIDAR cameras
- 4. Deployable drag augmentation devices (Sails)

Select the code from following:

- a) 1 and 2
- b) 3 and 4
- c) 1, 2 and 4
- d) All of the above

Q.24) Consider the following statements about 'Giant Metrewave Radio Telescope (GMRT)'

- 1. It is a global project with eleven member countries including India
- 2. It is a large multi radio telescope project aimed to be built in Australia and South Africa

Select the correct statements

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- a) 1 Only
- b) 2 Only
- c) Both 1 and 2
- d) Neither 1 nor 2

Q.25) Moderators are an important component of Nuclear reactors. The function of moderator is to:

- a) Absorb the kinetic energy of the neutrons.
- b) Absorb the heat generated by the nuclear reaction.
- c) Increase the number of neutrons.
- d) Increase the speed of neutrons to cause fission.

Q.26) Which of the following statements are correct about CERN?

1. CERN is an acronym for European Organization for Nuclear Research.
2. India is a founding member of CERN.
3. The Large Hadron Collider (LHC) in CERN is the World's largest particle accelerator.

Select the code from below:

- a) 1 and 2
- b) 2 and 3
- c) 1 and 3
- d) All of the above

Q.27) Which of the following correctly explains the term 'Nuclear Transmutation'?

- a) Use of radioactive materials to cause mutations in humans
- b) Conversion of one chemical element or isotope into another
- c) Chemical reaction of two compounds to form a new compound
- d) None of the above

Q.28) A large energy is released in a nuclear reaction because,

- a) Bonds are broken between the elements as they are hit by neutrons.
- b) Kinetic energy of neutrons is converted into heat energy
- c) Mass gets converted into energy
- d) All of the above

Q.29) ITER (International Thermonuclear Experimental Reactor) is the world's largest nuclear fusion experiment to harness fusion energy. Which of the following statements are correct about ITER?

1. It is using a magnetic confinement (Tokamak) to confine the reaction.
2. Hydrogen is being used as a fuel in ITER.
3. India is one of the member countries participating in ITER.

Select the code from below:

- a) 1 only
- b) 1 and 3

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- c) 2 and 3
- d) All of the above

Q.30) Consider the following statements:

1. Genetic Engineering Appraisal Committee (GEAC) is top biotech regulator in India which comes under the Ministry of Environment and Forest.
2. Currently Bt Cotton is the only GM crop which is being cultivated in India.

Which of the above statements are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Q.31) Which of the following statements are correct about DNA and RNA?

1. Both DNA and RNA are double stranded.
2. All four Bases present in DNA and RNA are same, but their combination is different.

Which of the above statements are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Q.32) Potency of a cell is its ability to develop into differentiated cells. In the light of this statement, consider the following statements:

1. A totipotent cells have the ability to create an entire organism.
2. Embryonic stem cells are totipotent.

Which of the above statements are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Q.33) Cloning is the process of producing similar populations of genetically identical individuals. Which of the following statements are correct about cloning?

1. Cloning does not occur naturally.
2. Cloning of organisms can occur through asexual reproduction.
3. Dolly, a sheep, was the first mammal to be artificially cloned.

Select the code from following:

- a) 1 and 2
- b) 2 and 3
- c) 1 and 3
- d) All of the above

Q.34) A new concept of Space Based Solar Power (SBSP) is an idea under consideration to generate clean energy. Which of the following statements is/are correct regarding SBSP?

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1. It is the concept of collecting solar power in outer space and distributing it to Earth.
2. Solar collectors will collect the light in space and beam it back to earth as microwaves.
2. The source of formation of shale gas is somewhere else and it travels through the permeable shale rocks and gets trapped in the pores.
3. Hydraulic Fracturing is the technique used for extraction of Shale gas.

Select the code from following:

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Which of the above statements are correct?

- a) 1 and 2
- b) 2 and 3
- c) 1 and 3
- d) All of the above

Q.35) Consider the following statements regarding hydrogen fuel cells:

1. It is a clean energy device which converts chemical energy into electrical energy.
2. The byproduct of hydrogen fuel cell is Carbon dioxide.

Which of the above statements is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Q.37) Which of the following statements correctly defines cold fusion?

- a) It is fusion of two molten metals at room temperature.
- b) It refers to a nuclear fusion reaction taking place at cryogenic temperatures.
- c) It refers to nuclear fusion reaction taking place at room temperature.
- d) It refers to nuclear fusion reaction in the stars.

Q.36) In recent times, there is a rise in the exploration works of the shale gas. Which of the following statements are correct regarding 'Shale Gas'?

1. It is predominantly Methane trapped in Shale rock formations.

Q.38) Endosulfan has been used as a pesticide in agriculture for a long time. India has agreed to phase out completely the use and manufacture of endosulfan by 2017. Which of the following statements are correct about endosulfan?

1. It is not pest specific and it can negatively impact the populations of beneficial insects.

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2. Endosulfan is acutely neurotoxic to both insects and mammals.
3. Endosulfan has high potential to bio-accumulate and bio-magnify.
4. Endosulfan is banned across the world under Stockholm convention.
5. Endosulfan is the cause of death of Indian vultures.

Q.40) Which among the following have recently designed India's first indigenous microprocessor called 'Shakti'?

- a) Indian Institute of Science
- b) IIT Madras
- c) IIT Delhi
- d) CSIR

Select the code from the following:

- a) 1,2 and 3
- b) 1,3 and 4
- c) 2,3,4 and 5
- d) All of the above

Q.41) Consider the following statements about Parker Solar probe

1. It is a joint mission of NASA and ESA to probe the outer corona of Sun
2. This is the first NASA mission that has been named for a living individual.

Q.39) Consider the following statements about GSAT 29

1. It is a multi-beam navigation satellite launched by ISRO to provide navigation services in Jammu & Kashmir and North Eastern regions of India.
2. It was launched aboard the Polar satellite launch vehicle into the sun synchronous polar orbit
3. GSAT-29 was the heaviest satellite, weighing 3,423 kg that was placed in orbit by an Indian launch vehicle.

Choose the correct code

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) None of the above

Choose the correct code

- a) 1 and 2 only
- b) 3 only
- c) 2 and 3 only
- d) 1 only

Q.42) Which of the following statements are correct regarding Poliovirus?

1. It mainly effect children under the age of 5.
2. It spreads through contaminated water or food.
3. The virus multiplies in the intestine and invades the nervous system and can cause paralysis.

Select the code from following:

- a) 1 and 2
- b) 2 and 3

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- c) 1 and 3
- d) All of the above

Q.43) Which of the following diseases are caused by Flavi virus?

- 1. Zika
- 2. Japanese encaphelitis
- 3. Dengue
- 4. Chikunguniya

Select the code from following:

- a) 1,2 and 3
- b) 2,3 and 4
- c) 1,3 and 4
- d) All of the above

Q.44) Which of the following statements correctly explains the term 'AngioChip'?

- a) It is an injectable tissue bandage that can repair damaged heart tissue.
- b) It is a semiconductor chip that can be programmed with the pace maker to see the progress of a heart ailment.
- c) It is a resin produced by coniferous trees of Himalayas which can be used to cure heart ailments.
- d) None of the above

Q.45) Which of the following statements are correct regarding new LDL – Cholesterol drugs?

- 1. It is expected to lower the cholesterol by 75%.
- 2. They are given twice a year instead of monthly or weekly like other treatments.

Select the code from below:

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Q.46) Which of the following statements are correct regarding the components of a drug?

- 1. Active Pharmaceutical Ingredients is the chemically active substance, which is meant to produce the desired effect in the body.
- 2. Excipients are the inactive or inert substances present inside a drug.

Select the code from below:

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Q.47) Which of the following statements are correct regarding 'Pin1'?

- 1. It is known as a master regulator of cancer signalling networks that activates more than 40 cancer-driving proteins and inactivates

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more than 20 tumour suppressing proteins.

2. It is a primary cancer drug which inhibits the growth of cancer stem cells.

Select the code from following:

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

1. It is a parasitic infection that can cause acute encephalitis syndrome.

2. Scrub typhus is transmitted by some species of trombiculid mites which are found in areas of heavy scrub vegetation.

Select the code from following:

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Q.48) Silicosis is a form of occupational lung disease caused due to inhalation of crystalline silica dust. Which of the following statements regarding Silicosis are correct?

1. It is characterized by shortness of breath, cough, fever, and cyanosis (bluish skin).
2. Patients with silicosis are particularly susceptible to tuberculosis (TB) infection.
3. Silicosis has 100% mortality rate.

Select the code from following:

- a) 1 and 2
- b) 2 and 3
- c) 1 and 3
- d) All of the above

Q.50) Government has recently banned the retail sale and private manufacturing of Oxytocin. Which of the following statements are correct regarding Oxytocin?

1. It stimulates lactation in cattle.
2. It is used by the doctors as a pain killer and to delay labour pain in women.
3. It might lead to infertility in dairy animals.

Select the code from following:

- a) 1 and 2
- b) 2 and 3
- c) 1 and 3
- d) All of the above

Q.49) Which of the following statements are correct regarding 'Scrub Typhus'?