Q.1) Identify the goddess who is also referred to as the 'Menstruating Goddess'

a) Goddess Kaali
b) Goddess Durga
c) Devi Kamakhya
d) Goddess Saraswati

Q.1) Solution (c)

Kamakhya Devi Temple: (ONLY PRASAD)
Faith: Centre of **Tantric and shakti** cults of Hinduism; amongst the **51 Shakti Peethas** related to the **cult of Sati**
Location: Nilachal Hills, overlooking river Brahmaputra in Assam

Q.2) Identify from the following the 'cave' that hosts the famous Kailasa Temple

a) Ajanta Caves
b) Karan Chaupar Cave
c) Junnar Cave
d) Ellora Cave

Q.2) Solution (d)

Q.3) Choose from among the following the Financial Regulators of India

1. RBI
2. CAG
3. SEBI
4. SIDBI

Choose the correct option/s from the following:

a) 1, 3 and 4
b) Only 1
c) Both 1 and 3
d) All of the above

Q.3) Solution (c)

www.IASbaba.com

Q.4) Which is the nodal agency for the National Bamboo Mission?

a) Ministry of New & Renewable Energy
b) Ministry of Agriculture
c) Ministry of Environment, Forest & Climate Change
d) Federation of Green Energy

Q.4) Solution (b)

National Bamboo Mission

- **Launch:** 2006-07
- **Called:** An evergreen plant
- **3-day world conference:** Indore (MP)

Q.5) Identify the Ministry which has launched the programmes HAPIS & CHAMAN:

a) Department of Nuclear Supplies
b) Integrated watershed development authority
c) Ministry of Environment, Forest and Climate Change
d) Ministry of Agriculture

Q.5) Solution (d)

CHAMAN:

- Coordinated Programme on Horticulture Assessment and Management using geoiNformatics
- **Remote sensing + Sample Survey**→ To assess data the area and production of major horticulture crops

HAPIS:

- Horticulture Area and Production Information System
- Web portal for online submission of district level data—areas & production of horticulture crops

www.IASbaba.com

Q.6) Consider the following statements regarding LIDAR technology:

1. It is the acronym for Laser Image Detection and Ranging.
2. It is a surveying and remote sensing method to measure ranges on earth.
3. The system works on the principle of Radar, but uses light from a Laser.

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.6) Solution (b)

LIDAR, which stands for Light Detection and Ranging, is a remote sensing method that uses light in the form of a pulsed laser to measure ranges (variable distances) to the Earth.

Q.7) Which of the following statements correctly describe the famous Gravitational Lensing Effect given by Einstein?

1. Light coming from one object will bend due the presence of mass between the object and the observer.
2. The effect is observed in space where light is bent under the influence of the mass of galaxies and dark matter.

Select the code from the following:

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

Q.7) Solution (c)

A **gravitational lens** refers to a distribution of matter (such as a cluster of galaxies) between a distant source and an observer that is capable of bending the light from the source, as it travels towards the observer.

www.IASbaba.com

Q.8) 'Car- to- Car communication' is a new technology being developed to reduce car accidents. Consider the following statements regarding 'Car-to-car communication':

1. Cars will have small radars to judge the speed of vehicles around them and manoeuvre accordingly.
2. This technique will only work in automatic driving when, driver is not steering the car and car is on auto pilot mode.

Which of the above statements are correct?

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

Q.8) Solution (d)

Called car-to-car or vehicle-to-vehicle communication, the technology lets cars broadcast their position, speed, steering-wheel position, brake status, and other data to other vehicles within a few hundred meters. The other cars can use such information to build a detailed picture of what's unfolding around them, revealing trouble that even the most careful and alert driver, or the best sensor system, would miss or fail to anticipate.

Already many cars have instruments that use radar or ultrasound to detect obstacles or vehicles. But the range of these sensors is limited to a few car lengths, and they cannot see past the nearest obstruction.

Car-to-car communication should also have a bigger impact than the advanced vehicle automation technologies that have been more widely heralded. Though self-driving cars could eventually improve safety, they remain imperfect and unproven, with sensors and software too easily bamboozled by poor weather, unexpected obstacles or circumstances, or complex city driving. Simply networking cars together wirelessly is likely to have a far bigger and more immediate effect on road safety.

Q.9) Consider the following statements regarding "Nuclear Suppliers Group":

1. It is a group of countries with nuclear weapons that seek to prevent nuclear proliferation.

www.IASbaba.com

2. NSG controls the export of materials, equipment and technology that can be used to manufacture Nuclear Weapons.
3. Recently India has become the member of NSG.

Which of the above statements are incorrect?

a) 3 only
b) 1 and 2
c) 1 and 3
d) None of the above

Q.9) Solution (c)

Nuclear Suppliers Group (**NSG**) is a group of nuclear supplier countries that seek to prevent nuclear proliferation by controlling the export of materials, equipment and technology that can be used to manufacture nuclear weapons.

All members of NSG do not have nuclear weapons.

Q.10) In International Space Station, a ball pen doesn't work because-

a) There is no air pressure.
b) There is no gravity.
c) The above statement is incorrect as ball point pen does work.
d) Because of artificial pressure, the ball gets jammed.

Q.10) Solution (b)

The pen doesn't work because there is no gravity to pull the ink down.

Q.11) Consider the following

1. Light and Sound Waves are Electromagnetic Waves
2. Both shows the property of Diffraction, Reflection and Refraction
3. While Sound is Transverse waves, light is Longitudinal in nature

Select the correct code

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

Q.11) Solution (c)

Sound is Mechanical Wave not electromagnetic. Sound is Longitudinal and light is Transverse. Second statement is true

Q.12) Consider the following statements:

1. The electric current in conductors is due to the flow of free protons.
2. The direction of electric current is taken as opposite to the direction of flow of the electrons.

Which of the above statements is correct?

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

Q.12) Solution (b)

The electric current in conductors is due to the flow of free electrons. The direction of flow of current is opposite to the direction of flow of electrons.

The electric current in conductors is due to the flow of free electrons. The direction of flow of current is opposite to the direction of flow of electrons.

Q.13) During Ice skating, the skater increases his rotation speed by pulling in his arms. The speed increases because of-

a) Conservation of angular momentum
b) Decrease in resistance from the air
c) Shifting of the centre of mass
d) Shifting of the centre of gravity

Q.13) Solution (a)

The ballerina by pulling in his arms decreases the radius of rotation. This in turn reduces the moment of inertia. To conserve angular momentum, if the radius is decreased the angular velocity increases.

www.IASbaba.com

Q.14) Centre for Advanced Animal Diagnostics and Services on Animal Health and Diseases (ADSAHD) to prevent cattle from exotic diseases, is being developed in which of the following regions?

a) North eastern Region
b) Haryana, Punjab and Rajasthan
c) Uttar Pradesh, Madhya Pradesh and Bihar
d) Andhra Pradesh and Telangana

Q.14) Solution (a)

The North Eastern Region of India, owing to its unique geographical location sharing five international borders, bears constant threat of exotic trans-boundary diseases of our valuable livestock. This programme is aimed at strengthening regional infrastructure and capabilities for developing latest diagnostics and organizing rigorous surveillance for the highly contagious and ravaging diseases so that forecasting model on disease outbreaks in the region can be developed for a formidable defence to guard the territories.

Q.15) The Cabinet Committee on Economic Affairs approved the launch of the 'National Supercomputing Mission'. This is a visionary program to enable India to leapfrog to the league of world class computing power nations. Which of the following statements are correct about 'National Supercomputing Mission'?

1. The Mission would be implemented and steered jointly by the Department of Science and Technology (DST) and Department of Electronics and Information Technology (DeitY).
2. The mission aims at developing the fastest supercomputer of the world in India.
3. The Mission envisages empowering our national academic and R&D institutions spread over the country by installing a vast supercomputing grid.
4. The Mission also includes development of highly professional High Performance Computing (HPC) aware human resource for meeting challenges of development of these applications.

Select the code from below:

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

www.IASbaba.com

Q.15) Solution (b)

National Supercomputing Mission

The Cabinet Committee on Economic Affairs approved the launch of the National Supercomputing Mission on 25th March 2015. This is a visionary program to enable India to leapfrog to the league of world class computing power nations. The Mission would be implemented and steered jointly by the Department of Science and Technology (DST) and Department of Electronics and Information Technology (DeitY) at an estimated cost of Rs.4500 crore over a period of seven years.

The Mission envisages empowering our national academic and R&D institutions spread over the country by installing a vast supercomputing grid comprising of more than 70 high-performance computing facilities. These supercomputers will also be networked on the National Supercomputing grid over the National Knowledge Network (NKN). The NKN is another programme of the government which connects academic institutions and R&D labs over a high speed network. Academic and R&D institutions as well as key user departments/ministries would participate by using these facilities and develop applications of national relevance. The Mission also includes development of highly professional High Performance Computing (HPC) aware human resource for meeting challenges of development of these applications.

Q.16) Consider the following statements:

1. Tuberculosis is caused by virus which is spread from person to person through air.
2. Bacille Calmette-Guerin (BCG) vaccinations are used in many countries to prevent severe forms of TB in children.
3. *Multidrug-resistant TB* (*MDR TB*) is caused by an organism that is resistant to at least isoniazid and rifampin, the two most potent TB drugs.

Which of the above statements are correct?

a) 1 and 2
b) 2 and 3
c) 1 and 3
d) None of the above

Q.16) Solution (b)

TB is a bacterial infection.

Q.17) Which of the following is not the property of base?

a) They react with acids to give salt and water
b) They are soapy to touch
c) They are donors of protons
d) They are acceptors of protons

Q.17) Solution (c)

- Acids are substances that can donate H+ ions to bases. Since a hydrogen atom is a proton and one electron, technically an H+ ion is just a proton. So an acid is a "proton donor", and a base is a "proton acceptor". The reaction between an acid and base is essentially a proton transfer.

The properties of acids and bases are:

- **Acids :** Sour, corrosive to metals and skin, PH of <7 and a POH of >7, turns blue litmus paper red, contains hydrogen (H+ ions), reacts with bases to form water and a salt.
- **Bases:** Bitter, slippery or soapy, PH of >7 and a POH of <7, turns red litmus paper blue, turns phenolphthalein pink/purple, contains hydroxide (OH- ions), reacts with acids to form water and a salt.

Q.18) Antibodies are formed by

a) T-cells
b) Monocytes
c) Phagocytes
d) B-cells

Q.18) Solution (d)

- Antibody, also called immunoglobulin, a protective protein produced by the immune system in response to the presence of a foreign substance, called an antigen. Antibodies recognize and latch onto antigens in order to remove them from the body. A wide range of substances are regarded by the body as antigens, including disease-causing organisms and toxic materials such as insect venom.
- When an alien substance enters the body, the immune system is able to recognize it as foreign because molecules on the surface of the antigen differ from those found in the

www.IASbaba.com

body. To eliminate the invader, the immune system calls on a number of mechanisms, including one of the most important—antibody production.

- Antibodies are produced by specialized white blood cells called B lymphocytes (or B cells). When an antigen binds to the B-cell surface, it stimulates the B cell to divide and mature into a group of identical cells called a clone. The mature B cells, called plasma cells, secrete millions of antibodies into the bloodstream and lymphatic system.

Q.19) Green plants in the sea are useful for the respiration of fish because

a) They give out oxygen
b) They give out carbon dioxide
c) The give out oxygen and carbon dioxide simultaneously
d) They take oxygen and give out carbon dioxide

Q.19) Solution (a)

Simple direct question - Factual answer

Q.20) Which of the following have highest elasticity?

a) Steel
b) Copper
c) Rubber
d) Aluminium

Q.20) Solution (a)

- The definition of elastic in physics is unfortunately inverse of common sense elastic. The more difficult it is to stretch, the more elastic a material is called to be because elasticity is defined by the ratio stress to strain and not vice versa.

www.IASbaba.com

- Elasticity is measured as ratio of stress to strain also known as **Young's Modulus**. For a given stress (stretching force per unit area) strain is much smaller in steel than in rubber and hence the answer.
- If the same force is applied to the wire of steel and rubber thread, which are of equal length and cross-section area, we will find that the extension in the rubber thread is much greater than extension in steel wire. Therefore, for a given stress, the strain produced in steel is much smaller than that produced in the rubber. This implies that Young's modulus for steel is greater than that for rubber. Therefore, steel is more elastic than rubber.
- And also physics defines elasticity as "resistance to change". The greater the resistance to change, the greater is the elasticity of the material and the faster it comes back to its original shape or configuration when the deforming force is removed. By this definition, steel is more elastic than rubber because steel comes back to its original shape faster than rubber when the deforming forces are removed.

Q.21) Consider the following statements:

1) The Global Apollo Programme is a call for a major global science and economics research programme to make carbon-free baseload electricity less costly than electricity from coal by the year 2025.
2) Key areas of focus includes Renewable energy, Energy storage, Smart grids and hydrogen vehicles.

Which of the above given statement(s) is/are true?

a) 1 only
b) 2 only
c) Both
d) None

Q.21) Solution (c)

- Both the given statements are correct and self-explanatory.

Key areas of focus:

- Renewable energy - in particular that derived from solar and wind sources
- Energy storage
- Smart grids
- hydrogen vehicles

www.IASbaba.com