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GENERAL STUDIES TEST SERIES

PRELIMINARY EXAMINATION - 2018

TEST 9: SCIENCE & TECHNOLOGY - I

Time Allowed: Two Hours

Maximum Marks: 200

Instructions:

1. This Test Booklet contains 100 items (questions). Each item comprises four responses (answers). You will select the response which you want to mark on the Answer Sheet. In case you feel that there is more than one correct response, mark the response which you consider the best.
2. All items carry equal marks.
3. Mark your answer on the Answer Sheet provided separately. For marking your answer darken the circle against the option by using a Pencil.
4. **Penalty for wrong Answers:**

THERE WILL BE PENALTY FOR WRONG ANSWERS MARKED BY A CANDIDATE IN THE OBJECTIVE TYPE QUESTION PAPERS

- (1) There are four alternatives for the answer to every question. For each question for which a wrong answer has been given by the candidate, **one-third** of the marks assigned to that question will be deducted as penalty.
- (2) If a candidate gives more than one answer, it will be treated as a wrong answer even if one of the given answers happens to be correct and there will be same penalty as above to that question.
- (3) If a question is left blank i.e., no answer is given by the candidate, there will be no penalty for the question.

Q1. Which of the following is/are correct about “Wind Aerogenerators”?

1. It can produce electric power on a continuous basis.
2. It can be used for on-grid and off-grid applications.

Select the correct code:

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

Q2. Which of the following is/are applications of geo-thermal energy?

1. Cooling
2. Drying
3. Mushroom Farming
4. Power generation

Select the correct code:

- (a) 1, 2 and 4 only (b) 2 and 4 only
(c) 3 only (d) 1, 2, 3 and 4

Q3. With reference to geo-stationary orbits, consider the following statements:

1. It is a circular orbit above the equator.
2. The revolution of a satellite in this orbit is synchronized with the revolution of the earth.
3. Remote sensing satellites are placed in this orbit.

Which of the above statements is /are correct?

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

Q4. Which of the following physical phenomena is used in LIGO experiment to detect gravitational waves?

- (a) Diffraction
(b) Dispersion
(c) Scattering
(d) Interference

Q5. With reference to Fast Breeder Reactor (FBR), which of the following statements is/are correct?

1. FBR generates more atomic fuel than it consumes.

2. FBR do not use moderator.
3. Other than US and Russia, India is the only country to commercially operate FBR.

Select the correct code:

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

Q6. Which one of the following is the best description of “Muntra” that was in news recently?

- (a) Unmanned Tank
(b) Kalavari Class Submarine
(c) Sub sonic Cruise Missile
(d) Air Defence Radar

Q7. ‘Mission 41k’ and ‘Mission Raftar’, sometimes seen in the news, is related to

- (a) Railways
(b) Defence
(c) Renewable Energy
(d) Textile

Q8. Consider the following statements about United Nations Ocean Conference (UNOC):

1. India hosted the Inaugural UNOC which was held in 2017
2. UNOC seeks to mobilize action for the conservation and sustainable use of the oceans, seas and marine resources.

Which of the above statements is/are correct?

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

Q9. Yudh Abhyas is a joint military exercise which was recently conducted between India and which one of the following nation?

- (a) USA (b) Russia
(c) Japan (d) France

Q10. With reference to International Campaign to Abolish Nuclear Weapons (ICAN), recently seen in news, consider the following statements :

1. ICAN is a coalition of developing countries advocating for an effective nuclear weapon ban treaty.

2. It is an outcome of Comprehensive Nuclear-Test-Ban Treaty (CTBT) adopted by United Nation.

Select the correct code:

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

Q11. World's first 'uranium bank', recently in news, was opened by IAEA in which one of the following countries?

- (a) Canada (b) Australia
(c) Kazakhstan (d) Japan

Q12. Which of the schemes given above is/are promoted by NITI Aayog?

1. Technological and Innovation Support Centres
2. Atal Innovation Mission
3. India Innovation Growth Programme

Choose the correct code:

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

Q13. With reference to Kalpakkam Mini Reactor (KAMINI) which of the following statement is/are correct?

1. It uses Thorium-232 as fuel.
2. It is India's first commercial thorium based reactor.

Select the correct code:

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

Q14. Consider the following:

1. Water
2. Carbon Dioxide
3. Heat

Which of the following given above is/are the by products of hydrogen fuel cell?

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

Q15. Which of the following is correct about tidal power?

- (a) Tidal Power is generated by a floating platform constructed on sea

- (b) Tidal Power can generate more power than off shore Wind Power

- (c) Tidal Power is similar in operation to Hydro Power

- (d) Tidal Power in India can be generated in coastal areas and islands

Q16. Radiocarbon dating technique can be used to estimate the age of which of the following.

1. Fossils
2. The age of earth
3. Rocks

Select the correct answer from the codes given below.

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

Q17. With reference to GPS Aided GEO Augmented Navigation (GAGAN) which of the following statements is/are correct.

1. It is a global navigational satellite system (GNSS).
2. It provides the capability for high quality Air Traffic Management over Indian airspace.
3. The national civil aviation policy requires all aircrafts flying over Indian airspace to mandatorily be GAGAN enabled.

Select the correct code:

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

Q18. Which one of the following is the best description of 'INS Arihant'

- (a) Diesel powered attack submarine
(b) Nuclear powered aircraft carrier
(c) Amphibious transport dock
(d) Nuclear powered ballistic missile submarine

Q19. Consider the following:

1. Geo-thermal energy
2. Wind energy
3. Ocean Thermal Energy Conversion

Which of the energy resources given above is/are **not** used in India?

- (a) 2 and 3 only (b) 3 only

- (c) 1 only (d) None

Q20. Which of the following can be used to make radio-isotopes?

1. Research reactors
2. Accelerators

Select the correct code:

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

Q21. Arsenic contamination of groundwater is a cause for serious concern. Which of the following can be used to remove arsenic from drinking water?

1. Boiling
2. Reverse osmosis
3. Bleaching

Select the correct answer from the codes given below:

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

Q22. 'GRAPES-3', sometimes seen in the news, is related to

- (a) Telescope to study the propagation of solar storms.
(b) Underground neutrino observatory
(c) Instrument to investigate gravitational waves.
(d) Solar powered submarine

Q23. Which among the following is/ are the application of 'biocide'?

1. Antibiotics
2. Food preservatives
3. Disinfectants

Select the correct code:

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

Q24. What is/are the advantage/advantages of setting up of cold storage facility in Food Processing Industry?

1. It increases the respiration level of fresh foods.
2. It increases resistance to ethyleneaction.

3. It increases transpiration level.
4. It decreases activity of microorganisms.

Select the correct code:

- (a) 1, 3 and 4 only (b) 2 and 4 only
(c) 2 and 3 only (d) 1, 2, 3 and 4

Q25. Consider the following statements regarding 'Innovate in India'

1. It is a mission to promote entrepreneurship and industry in biopharmaceutical sector.
2. It is a programme of Government of India in collaboration with World Bank.
3. It is implemented by Central Drug Standards Control Organization (CDSCO).

Which among the above statements is/are correct?

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

Q26. Which one of the following statements best describes a ransomware?

- (a) It is an error or fault in computer program that causes it to give an incorrect or unintended result.
(b) It is a malicious computer program that misleads the user from their true intent.
(c) It is a malicious software that gather information about the users without their actual knowledge.
(d) It is a type of malicious software from that threatens to publish the victim's data or perpetually block access to it.

Q27. Which of the following statements regarding satellite 'Rukmini' is correct?

- (a) It is a satellite dedicated exclusively for women empowerment and women safety
(b) It is a military communication satellite to improve India's maritime security.
(c) It is the microsatellite satellite jointly developed by ISRO and students of Indian Institute of Technology.
(d) It is a communication satellite to be used exclusively by Prasar Bharati.

Q28. Consider the following statements regarding 'Technology and Innovation Support Center' programme recently seen in news.

1. It is a programme aimed at innovators in developing countries to manage their intellectual property (IP) rights.
2. The programme comes under the aegis of World Intellectual Property Organization (WIPO).

Which of the above statements is/are correct?

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

Q29. With reference to defense technology which of the following best describes 'Nirbhay'?

- (a) Short range ballistic missile
(b) Main battle tank
(c) Sub-sonic cruise missile
(d) Body armour

Q30. Recently a laboratory has been set up to detect dark matter in India. Where is such facility constructed?

- (a) In a Hill
(b) Underground Iron mine
(c) Under a lake
(d) Underground Uranium mine

Q31. 'SAMPADA', an initiative of the Government of India has been in news recently. It aims at:

- (a) Skill development and assured employability to the youth.
(b) Agro-marine processing and development
(c) Financing self-help groups
(d) Revamping vocational education in India

Q32. With reference to 'eVIN-project' of government of India, which of the following statements is/are correct?

1. It is a technology system that digitizes vaccine stocks in the country.
2. It is jointly implemented by Government of India and UNDP.

Select the correct code:

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

Q33. Consider the following statements:

1. Air Independent Propulsion System is an aircraft propulsion technology which

operates without using oxygen for combustion

2. Scramjet is air-breathing propulsion system that can operate at supersonic speeds.

Which of the above statement is/are correct?

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

Q34. Which one of the following statements about the 'South Asia Satellite' is **not** correct?

- (a) It is a multinational collaboration project
(b) It employs electrical propulsion system for acceleration.
(c) The satellite serves the needs of all the SAARC nations except Pakistan
(d) It will support both communication and meteorological services

Q35. Which one of the following is a purpose of the 'Phased Manufacturing Programme', a scheme under the Government of India?

- (a) To promote the manufacturing of solar panels in the country
(b) To promote domestic manufacturing of mobile handsets in the country
(c) To support the MSME sector to achieve global competitiveness
(d) To promote mechanization and standardization in the handloom sector in the country.

Q36. Which of the following is/are the indicator/indicators of the Global Innovation Index published by World Intellectual Property Organization?

1. Political stability
2. Ease of paying taxes.
3. School life expectancy

Select the correct code:

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

Q37. With reference to artificial cloud, which among the following statements is/are correct?

1. Aircraft engine exhaust can induce the formation of artificial clouds.

2. Artificial clouds can destroy the ozone layer.

Select the correct code:

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

Q38. In the context of exploring marine fish resources, what is/are the advantage/advantages of deep sea trawling practice?

1. It enables fishing with minimum impact on marine biodiversity.
2. It is best suitable in tropical seas where the fish species are distributed heterogeneously.

Select the correct answer using the codes given below:

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

Q39. What is Huiyan satellite recently in news?

- (a) X-ray astronomy satellite launched by China.
(b) Geostationary communication satellite developed by Japan.
(c) Sun-synchronous weather satellite developed by South Korea.
(d) Global Navigational Satellite jointly developed by ASEAN countries.

Q40. With reference to palm oil based biodiesel production, which among the following statements is/ are correct?

1. It contribute to deforestation of the rainforest.
2. Palm oil based biofuels are banned in India.

Select the correct code:

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

Q41. Kepler Spacecraft recently in news was launched by

- (a) European Space Agency (ESA)
(b) National Aeronautics and Space Administration (NASA)
(c) Indian Space Research Organization (ISRO)
(d) China National Space Administration (CNSA)

Q42. What is the purpose of 'Tarang Sanchar portal', which was recently launched in India?

- (a) It is used to communicate between locomotive driver and the last wagon of the train.
(b) It is to track radiation emitted from mobile towers within a locality.
(c) To study the colourful display of high latitude skies
(d) It is a technique for tracking the movements of tigers in protected areas.

Q43. Consider the following statements with respect to Extra Neutral Alcohol (ENA):

1. It is a high distilled alcohol without any impurities.
2. They are mainly used in cosmetic industries and perfumeries.

Which of the above statements is/are correct?

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

Q44. With reference to Geographical Indication (GI) tag, which of the following statements is/are correct?

1. The registration of GI tag is valid for a period of 10 years.
2. It prevents unauthorized use of GI tag products by others.
3. It comes under the purview of Trade related Intellectual property rights (TRIPS).

Select the correct code:

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

Q45. Which one of the following is correct about NASA's Parker Probe?

- (a) It is a planned NASA robotic spacecraft to probe the outer corona of the Sun
(b) It is a planned NASA mission to Jupiter's Moon Europa
(c) It is an interplanetary space probe to study Pluto and its moon Charon
(d) It is an unmanned spacecraft for the exploration of the outer Solar System

Q46. Consider the following statements regarding Prithvi-II Missile:

1. It is a single-stage liquid fuelled surface-to-surface ballistic missile developed by DRDO.
2. It is having a range of 5000 Kilometers and is capable of carrying payloads of up to 1,000kg.

Which of the above statements is/are correct?

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

Q47. Consider the following statements regarding Neutron star Interior Composition Explorer (NICER) mission:

1. It is a mission by European Space Agency to study neutron stars.
2. The equipment for the mission is installed abroad the International Space Station.

Select the correct code:

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

Q48. Consider the following statements:

1. DigiYatra Platform was launched by Ministry of Railways to develop a digital ecosystem that will deliver seamless and paperless service experience
2. The 'Air Sewa' Web Portal is an integrated platform for the grievance redressal of air passengers.

Which of the above statements is/are correct?

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

Q49. With reference to 'The Indian Bureau of Mines (IBM)', consider the following statements:

1. IBM aims to promote systematic and scientific development of both onshore and offshore mineral resources.
2. It oversees the e-auctioning and allocation of coal mines.

Which of the above statements is/are correct?

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

Q50. Which of the following statements is/are correct regarding Jute-ICARE initiative of Government of India? It is a Government of India initiative undertaken by Ministry of Textiles.

1. It is an initiative to introduce the better agronomic practices and recently developed microbial assisted retting among farmers.
2. It is aimed at distribution of quality certified seeds at subsidized rate.

Select the correct code:

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

Q51. With reference to 'Sagarvani', recently seen in news, which among the following is/are correct?

1. It is an integrated information dissemination system launched by Ministry of Earth Science.
2. It will serve the coastal community, especially the fishermen community with advisories and alerts towards their safety at Sea.
3. Television and cable network mediums are also used for dissemination services.

Select the correct code:

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

Q52. With reference to processed foods in India, consider the following statements:

1. Nuclear technology is the most affordable technology to keep food fresh.
2. Trials conducted in the purview of the Department of Atomic Energy certifies such foods safe for consumption.

Which of the above statements is/are correct?

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

Q53. With reference to 'Codex Alimentarius' recently seen in news, consider the following statements:

1. It is a collection of internationally recognized standards and guidelines relating to food production and food safety.

2. It is established by the Food and Agriculture Organization of the United Nations.
3. It is recognized by the World Trade Organization as an international reference point for the resolution of disputes concerning food safety.

Which of the above statements is/are correct?

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

Q54. With reference to 'combustible ice', consider the following statements:

1. It is concentrated natural gas trapped beneath permafrost and ocean sediments.
2. India is currently undertaking commercial exploration in the Indian Ocean.

Which of the above statements is/are correct?

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

Q55. Consider the following statements about the 'Cell for IPR Promotion and Management(CIPAM)':

1. CIPAM was setup to monitor the implementation of Patents Act, 1970.
2. CIPAM processes, examines and accords Intellectual Property Rights.
3. It works under the aegis of the Department of Industrial Policy and Promotion.

Which of the above statements is/are correct?

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

Q56. SHAKTHI scheme recently launched looks to promote which of the following:

- (a) Promoting an enabling environment for entrepreneurship development among the youth.
(b) Scheme for forming women's collectives and to promote empowerment.
(c) Scheme to promote microgrid renewable energy solutions for electrification in rural areas.
(d) Promoting transparent auctioning of fuel coal linkages.

Q57. Which of the following statements is/are the mandates of World Organization for Animal Health?

1. To provide expertise in the control of animal diseases.
2. To improve the safety of food of animal origin.
3. To establish standards and guidelines for animal welfare.

Which of the above statements is/are correct?

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

Q58. Consider the following statements about NISAR:

1. Its purpose is to measure the changes on earth's land surface, ice surface, glaciers, earthquakes and volcanoes.
2. The satellite will be the first radar imaging satellite to use dual frequency.
3. NISAR mission is a joint project between NASA, European Space Agency and ISRO.

Which of the above statements is/are correct?

- (a) 1 and 2 only (b) 2 and 3 only
(c) 1 and 3 only (d) All of these

Q59. What is Kessler Syndrome?

- (a) A disease where human talk while sleeping.
(b) A rare viral disease causing respiratory problems.
(c) A problem found in space launch vehicles.
(d) Proliferation of space debris in low earth orbit.

Q60. Which of the following statements about the CERN is/are correct?

1. European countries are members of the CERN.
2. India is an associate member of the CERN.
3. Gravitational waves were recently detected by the CERN scientists.

Code:

- (a) 1 and 2 only (b) 2 only
(c) 2 and 3 only (d) None

Q61. What are applications of cryogenics which is the study of the production and behaviour of materials at very low temperatures?

1. Space travel
2. Preservation of biological samples
3. High speed trains
4. Cyclotrons

Code:

- (a) 1 and 2 (b) 1, 2 and 3
(c) 2, 3 and 4 (d) 1, 2, 3 and 4

Q62. Which of the following statement(s) about Barak-8 missile system is/are correct?

1. It has interceptor capacity to destroy multiple targets.
2. It can destroy targets on land, air and water.
3. It has been jointly developed by India and France.

Select the correct code:

- (a) 1 only (b) 1 and 2 only
(c) 1, 2 and 3 (d) None

Q63. Consider the following about anti-ballistic missile (ABM):

1. An ABM is a missile designed to counter ballistic missiles.
2. A ballistic missile is used to deliver nuclear, chemical, biological or conventional warheads in a ballistic flight trajectory.
3. The Anti-Ballistic Missile Treaty (ABM Treaty or ABMT) was a treaty between the United States and the India.

Which of the above statements is/are correct?

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

Q64. Select the correct statements regarding the positron which is an elementary particle:

1. Having mass equal to that of an electron.
2. With a charge opposite to that of an electron.
3. With a charge equal to that of a proton.
4. Having mass equal to that of a proton

Code:

- (a) 1 and 3 only (b) 2 and 4 only
(c) 1, 2 and 3 only (d) 1, 3 and 4 only

Q65. Consider the following statements:

1. Nuclear medicine techniques make use of radiation emitted by radio-isotopes.
2. A radiopharmaceutical is a compound that has been tagged with radioisotopes for diagnostic or therapeutic purposes.
3. BARC and NPCIL both produce radio-isotopes for nuclear medicine.

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

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

Q66. Consider the following about Advanced Heavy Water Reactor (AHWR) technology:

1. The Advanced Heavy Water Reactor (AHWR) has been designed to fulfill the need for the timely development of thorium-based technologies for the entire thorium fuel cycle.
2. BHAVINI is developing the AHWR for commercial purpose.

Which of the statements is/are correct?

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

Q67. Consider the following statements about IAEA:

1. Role of IAEA is to promote nuclear safeguards and peaceful use of nuclear technology.
2. IAEA is an intergovernmental organization and is one of the specialized agency under United Nations.
3. India is also one of the 168 members of IAEA.

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

- (a) Only 1 and 3 (b) Only 1
(c) Only 2 and 3 (d) All of these

Q68. Consider the following statements:

1. Solar Energy Corporation of India executes the National Solar Mission for development, promotion and commercialization of solar energy technologies in the country.

2. National Institute of Wind Energy is located in Madhya Pradesh.

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

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

Q69. Which of the following is/are correctly paired?

Energy Source Concerned Institution

1. OTEC : Ministry of Earth Sciences
2. Tidal : Ministry of New & Renewable Energy
3. Geothermal : Geological Survey of India

Select the code:

- (a) 2 only (b) 1 and 2 only
(c) 1, 2 and 3 (d) None of these

Q70. With reference to bio-diesel revolution, consider the following statements:-

1. Mainly Jatropha Curcus plant is used for bio-diesel production.
2. Bio-diesel cannot be stored like other fuels i.e diesel, petroleum etc.
3. Bio-diesel can extend the life of diesel engine because it is more lubricating than petroleum diesel fuel.

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

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

Q71. Which of the following is **not** a preferred site for geo-thermal power in India?

- (a) Puga Valley (b) Manikaran
(c) Manesar (d) Badrinath

Q72. Consider the following statements regarding asteroids. Which of the following statements are correct?

1. Asteroids are rocky debris of varying sizes orbiting the Jupiter.
2. Most of the asteroids are small but some have diameter as large as 1000 km.
3. The Dawn Spacecraft has visited the asteroid belt.

Code:

- (a) 1, 2 and 3 (b) 2 and 3 only

- (c) 2 only (d) 1 and 3 only

Q73. Scientists at Central Institute of Medicinal & Aromatic Plants (CIMAP), succeeded in whole genome sequencing of Holy basil or Tulsi (Ocimum sanctum). Which of the following statement(s) is/are correct?

1. CIMAP is a frontier plant research laboratory of Council of Scientific and Industrial Research (CSIR) located in Lucknow.
2. Tulsi, which is used as an essential medicinal plant is revered as Vishnupriya.
3. Tulsi lacks phenylpropanoids, terpenoids and their derivatives which are harmful for our body.

Code:

- (a) 1 and 2 only (b) 2 and 3 only
(c) 1 and 3 only (d) All of these

Q74. Barium in a suitable form is administered to patients before an x-ray examination of the stomach, because

1. Barium allows x- rays to pass through the stomach on account of its transparency to x – rays.
2. Barium compound, like magnesium sulphate helps in cleaning the stomach before x- ray examination
3. Barium is a good absorber of x – rays and this helps the stomach to appear clearly in contrast with the other regions in the picture.
4. Barium is a good reflector of X-rays and this helps the stomach to appear clearly in contrast with the other regions in the picture.

Q75. Iodine-125 has significant applications in medicines. Consider the following statements:

1. It is used in treatment of cancer.
2. It can be used for treating retinoblastoma, a rare form of eye cancer.
3. It is produced from nuclear reaction using Xenon.

Select the correct code:

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

Q76. Which of the following are the examples of 'Contact Forces'.

1. Nuclear Force
2. Gravitational Force
3. Frictional Force
4. Air resistance
5. Viscous Force

Code:

- (a) 1, 3, 4 and 5 only (b) 1, 2 and 3 only
(c) 3, 4 and 5 only (d) 1, 2, 4 and 5 only

Q77. China has successfully launched satellite Gaofen system. Which of the following statement(s) is/are **wrong**?

1. Gaofen-4 is China's first geosynchronous orbit high-definition optical imaging satellite.
2. It will be used for surveillance of geological disasters and forest disasters, disaster prevention and relief and meteorological forecast.

Code:

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

Q78. Where in India off-shore wind power generation can take place?

1. Sunderbans
2. Kutchh
3. Kanyakumari

Code:

- (a) 1 and 2 only (b) 2 and 3 only
(c) 1 and 3 only (d) All of these

Q79. GSLV-D1 was successfully launched by ISRO. With reference to this consider the following statements:

1. GSLV-D1 is Mark II version and inducted the communication satellite into a Geosynchronous Transfer Orbit (GTO)
2. Cryogenic Upper Stage (CUS) uses Oxygen liquifies at -183 deg C and Hydrogen at -253 deg C.

Which of the above statements are correct?

- (a) 1 only (b) 2 only

- (c) Both 1 and 2 (d) Neither 1 nor 2

Q80. Whenever a radioactive element undergoes disintegration by emitting 2 α - particles and 3 β - particles. Now its position is-

- (a) In the same group as the original element.
(b) In the group preceding the position of the original element.
(c) In the group succeeding the position of the original element.
(d) Four place ahead of the position of the original element.

Q81. Which among the following statement(s) is/are correct about new technologies in energy sector?

1. Ocean wind energy system has been developed and commercialized in India.
2. Ocean tidal power plant can be operated in creeks.

Code:

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

Q82. Which of the following country is **not** correctly matched with their Global Navigation Satellite Systems?

- (a) United States : Global Positioning System
(b) Russia : GLONASS
(c) France : DORIS
(d) Japan : BeiDou

Q83. Consider the following statements:

1. Project white spaces is being developed by Microsoft.
2. The objective of the project is to provide Internet access to rural and remote areas.
3. It will be a part of India's Make in India Mission.

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

- (a) Only 1 (b) Only 2 and 3
(c) Only 2 (d) Only 1 and 3

Q84. For what application ASTRO-H space observation satellite has been developed:

- (a) Mars and its atmosphere.

- (b) Solar Flare
- (c) Asteroids
- (d) Black Holes

Q85. 'Bhuvan-Portal' was launched by ISRO meant to

- (a) act as employment portal.
- (b) utilize space technology for its pipeline safety monitoring .
- (c) for logistics and real time monitoring of wildlife
- (d) to provide GIS applications across many platforms

Q86. Consider the following statements about IREDA, a Public Limited Government Company:

1. IREDA is a non-banking financial company.
2. Solar Energy Corporation of India Corporation has "Mini Ratna" (Category-I) status.
3. DST is the nodal agency under Ministry of New and Renewable Energy to promote hydrogen fuel cells.

Which of the above statements is/are **not** correct?

- (a) 1 only
- (b) 2 and 3 only
- (c) Only 3
- (d) None of these

Q87. Where in India first ultra mega solar power project has been set up?

- (a) Charanka
- (b) Gawal Pahari
- (c) Bikaner
- (d) Leh

Q88. Consider the following statements about Gas Hydrates:

1. Gas Hydrates are formed as the stable solid.
2. Most gas hydrates are formed from cooled Nitrous oxide.
3. When gas molecules are trapped in a lattice of water molecules at temperatures below 0°C and pressures above one atmosphere, they form gas hydrates.
4. Hydrates also influence the global climate change.

Which of the above statements are correct?

- (a) Only 1, 3 and 4
- (b) Only 1, 2 and 3

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

Q89. Consider the following about India's first expedition to the Arctic:

1. The expedition was planned to carry out study on bacterial life in the region and measurement of environmental changes to help understand why glaciers in the Himalayas are melting so rapidly.
2. India has access to Svalbard because of a treaty with Norway, which has sovereign rights over the area.
3. Currently, Norway, Germany, France, Britain, Italy, Japan, Republic of Korea and China have research stations in the area.

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

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

Q90. Which among the following is/are the research base station for Arctic research?

- 1. Maitri
- 2. Dakshin Gangotri
- 3. Bharati
- 4. Himadri

Code:

- (a) 1 and 2
- (b) 1, 2 and 3
- (c) 3 and 4 only
- (d) 4 only

Q91. Sagar Sampada includes

- (a) India's biggest passenger ship.
- (b) An area in Indian Ocean which has large amount of living and non-living marine resources.
- (c) Fisheries and oceanographic research vessel
- (d) Petroleum deposits in Indian Ocean

Q92. Which of the following is **not** an application of GSAT satellites?

- (a) Tele education
- (b) Tele medicine
- (c) Meteorology
- (d) Oceanography

Q93. Consider the following statements about:

1. Nano particles can be used to study cancer.

2. Opto-electronics can be developed using nano-materials.
3. Nano-materials are tried out for efficient power generation.

Which of the above statements is/are **incorrect**?

- (a) 1 only (b) 1, 2 and 3
(c) 3 only (d) None of these

Q94. With reference to "Atal Innovation Mission", which among the following statements is/are correct?

1. It is an initiative with the objective to make clean energy affordable.
2. Ministry of New and Renewable Energy is the nodal agency for implementing this initiative.

Select the correct code:

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

Q95. US extends anti-dumping duty on Indian preserved mushrooms for 5 years. Consider the following statements:

1. Solan district of Madhya Pradesh is popular as 'Mushroom City of India'.
2. Preserved mushrooms have high content of folic acid and also has amino acids.

Which of the above statements are correct?

- (a) Only 1 (b) Only 2
(c) Both of these (d) None of these

Q96. Which of the following sentences are **incorrect** about Light Fidelity?

1. It is wireless and uses visible light communication or infra-red and radio frequency waves spectrum.
2. Li-Fi is a unidirectional, high speed and fully networked wireless communication technology similar to Wi-Fi.

Code:

- (a) Only 1 (b) Only 2
(c) Both of these (d) None of these

Q97. Radioactive tracer, or radioactive label are extensively used:

1. In hydraulic fracturing,

2. In metabolism research,
3. In positron emission tomography (PET)

Code:

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

Q98. Which of the following statements is **not** true about Wassenaar Arrangement?

- (a) It controls dual use technology
(b) India is 42nd member country to join Wassenaar Arrangement
(c) Space technologies are not regulated
(d) India will gain access to international market in conventional arms

Q99. Consider the following statements:

1. The nuclear fuel cycle starts with the mining of uranium and ends with the disposal of nuclear waste.
2. In India Uranium is available only in monazite soils of Western coast but difficult to extract.
3. Shortage of Uranium is a major hindrance for India's nuclear power policy.

Which of the above statements is/are correct?

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

Q100. India-based Neutrino Observatory is included by the Planning Commission as a mega science project under the 11th Five-year Plan. In this context, consider the following statements:

1. Neutrinos are chargeless elementary particles that travel close to the speed of light.
2. Neutrinos are created in nuclear reactions of beta decay.
3. Neutrinos have a negligible, but nonzero mass.
4. Trillions of Neutrinos pass through human body every second.

Which of the statements given above are correct?

- (a) 1 and 3 only (b) 1, 2 and 3 only
(c) 2, 3 and 4 (d) 1, 2, 3 and 4