DO NOT OPEN THIS TEST BOOKLET UNTIL YOU ARE TOLD TO DO SO

T.B.C. : STS-K-TPT
Serial No.:

Test Booklet Series

B

TEST BOOKLET

Subject : Test 9 – Science & Technology
Question Paper

Time Allowed : Two Hours **Maximum Marks : 200**

INSTRUCTIONS

1.IMMEDIATELY AFTER THE COMMENCEMENT OF THE EXAMINATION, YOU SHOULD CHECK THAT THIS TEST BOOKLET DOES NOT HAVE ANY UNPRINTED OR TORN OR MISSING PAGES OR ITEMS, ETC. IF SO, GOT IT REPLACED BY A COMPLETE TEST BOOKLET.

2. Please note that it is the candidate's responsibility to encode and fill in the Roll Number and Test Booklet Series A, B, C or D carefully and without any omission or discrepancy at the appropriate places in the OMR Answer Sheet. Any omission/discrepancy will render the Answer Sheet liable for rejection.

3. You have to enter your Roll Number on the Test Booklet in the Box provided alongside. DO NOT write anything else on the Test Booklet.

4. This Test Booklet contains 100/80 items (questions). Each item is printed in English. Each item comprises of 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. In any case, choose ONLY ONE response for each item.

5. You have to mark all your responses ONLY on the separate Answer Sheet provided. See directions in the Answer Sheet.

6. All items carry equal marks

7. Before you proceed to mark in the Answer Sheet the response to various items in the Test Booklet, you have to fill in some particulars in the Answer Sheet as per instructions sent to you with your Admission Certificate.

8. After you have completed filling in all your responses on the Answer Sheet and the examination has concluded, you should hand over to the Invigilator only the Answer Sheet. You are permitted to take away with you the Test Booklet.

9. Sheets for rough work are appended in the Test Booklet at the end.

10. **Penalty for wrong answers:**

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

(i) 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** if the marks assigned to that question will be deducted as penalty.

(ii) 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.

(iii) If a question is left blank, i.e., no answer is given by the candidate, there will be no penalty for that question.

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1. Arrange the following in increasing order of their basicity:

1. Gastric Juice
2. Pure water
3. Lemon Juice
4. Sodium Hydroxide solution

Select the correct answer using the code given below:

(a) 1<2<3<4
(b) 1<3<2<4
(c) 4<3<1<2
(d) 4<2<3<1

2. Which of the following are Plant Hormones?

1. Auxin
2. Gibberellins
3. Cortisol
4. Abscisic acid

Select the correct answer using the code given below:

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

3. Consider the following statement regarding Nuclear reactors:

1. A nuclear reactor is a device in which fission i.e. combination of the nuclei occurs.
2. A reactor that produces more fissionable material than it burns is called as Breeder reactors.

Which of the above statements is/are correct?

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

4. With reference to the 'Oxytocin', seen in news recently, consider the following statements:

1. It is natural hormone secreted by pituitary glands in mammals.
2. It is listed in National List of Essential Medicines (NLEM) as it is crucial in preventing post-partum hemorrhage.
3. It also helps in formation of milk after the birth of a baby.

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

5. Which of the following correctly describes essential fatty acids?

(a) Fatty acids which cannot be replaced by other fatty acids.
(b) Fatty acids which are prepared by carbohydrates present in our body.
(c) Fatty acids which are supplied by the food we eat.
(d) Fats containing saturated fatty acids.

6. Consider the following statements with reference to the Gravitational waves:

1. Detection of these waves challenges the validity of the General Theory of Relativity.
2. Gravitational waves allow scientists to view Black holes directly.
3. LIGO India detector will be set up in Karnataka by 2025 .

Which of the above statements is/are incorrect?

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

7. Consider the following statements:

1. Antimicrobial resistance is the ability of a microbe to resist the effects of medication previously used to treat them.
2. India launched the Red Line campaign for Anti-Microbial Resistance awareness.
3. Interagency Coordination Group on Antimicrobial Resistance (IACG) was convened by the World Health Organization (WHO).

Which of the above statements is/are correct?

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

8. Consider the following statements:

1. The bile produced by the liver is stored in gall bladder.
2. Pancreas is an organ that performs both endocrine as well as exocrine function.
3. The bile from liver and the pancreatic juice helps in the digestion of food in stomach.

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

9. Which of the following are sources of extracting Stem Cells

1. Embryonic, Extra-Embryonic and Amniotic fluid
2. Bone marrow
3. Adipose tissue (fat cells)
4. Blood
5. Umbilical cord blood just after birth

Select the answer from the codes given below

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

10. Inch Worms inspired to make Tree climbing robots, Bullet Train inspired from King Fisher bird, Velcro tape was inspired from burrs that have hooks.

The above examples show that objects can be designed by copying the natural elements. This process is called as

a) Biomimetics
b) Bionics
c) Biosystematics
d) Biomechanics

11. What is Remove Debris Mission

a) It is a mission aiming to remove plastic debris from ocean
b) It is a mission aiming to remove particulate matter from the atmosphere
c) It is a mission aiming to remove toxic debris from coastal areas
d) It is a mission aiming to remove rubbish from the space

12. Match Satellite Launch stations with the respective countries using the codes given below

Launch station	Location
A. Kourou	1. Miami, Florida
B. Cape Canaveral	2. India
C. Baikonur	3. French Guiana
D. Sriharikota	4. Kazakhstan

Code:

	A	B	C	D
a)	2	1	4	3
b)	2	4	1	3
c)	3	4	1	2
d)	3	1	4	2

13. "Digital Sky Platform" recently in news is associated with

a) Ballistic Missiles
b) Low flying sea planes
c) Private non government Satellites
d) Unmanned Aerial Vehicles

14. VoIP (Voice Over Internet Protocol) is the transmission of voices and multimedia content over IP networks, i.e., telephoning via the Internet. Which of the following is not a VoIP

a) Whatsapp Call
b) Skype
c) Netflix
d) Google Duo

15. An orbit is a regular, repeating path that one object in space takes around another one. In this context, consider the following statements:

1. Polar Orbits have an inclination of nearly 180 degrees.
2. Satellites placed in a Sun Synchronous orbit when pass over a certain section of the Earth, next day it will again pass over the same place at the same time of day.

Which of the above statements is/are correct?

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

16. Bio fertilizers are the substance that contains microbes, which helps in promoting the growth of plants, trees by increasing the supply of essential nutrients to the plants. In this context, consider the following statements:

1. Only Rhizobium, Azotobacter, Azospirillum, Phosphate Solubilizing Bacteria and mycorrhiza, have been incorporated as biofertilizers in India's Fertilizer Control Order (FCO), 1985.
2. Blue-green algae fixes atmospheric nitrogen in soil.

Which of the above statements is/are correct?

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

17. With reference to the Antrix Corporation in India, consider the following statements:

1. It is a Maharatna company.
2. It is involved in building and marketing of satellites systems but it cannot establish ground infrastructure for space applications.

Which of the above statements is/are correct?

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

18. Which of the following pairs is/are correctly matched?

Disorder	Deficiency of
1. Xerophthalmia	– Retinol
2. Osteomalacia	– Calciferol
3. Beri-Beri	– Riboflavin
4. Cheilosis	– Thiamine

Select the correct answer using the code given below:

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

19. Consider the following statements regarding Zika Virus:

1. Zika is transmitted by Aedes aegypti mosquito which also transmits viruses that cause chikungunya and yellow fever.
2. Unlike the mosquitos that cause malaria, Zika mosquitos bite between dusk and dawn.
3. Sexual contact with zika infected person can cause microcephaly.

Which of the above statements is/are incorrect?

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

20. In the context of active and passive immunity, consider the following statements:

1. Provision of ready-made antibodies to protect the body against foreign agents is called active immunity.
2. Deliberately injecting the microbes during immunization is an example of passive immunity.
3. Active immunity takes more time than passive immunity to give full effective response.

Which of the above statements is/are incorrect?

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

21. Diseases can be classified into various types. In this context, consider the following statements:

1. Congenital diseases are those that are transmitted from parent to offspring from generation to generation.
2. Non-communicable diseases are chronic diseases that can be caused due to behavioral factors.

Which of the above statements is/are correct?

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

22. Match the following initiatives under National Broadband Mission with their provisions:

Initiative	Provision
A. BharatNet	1. Connecting all key rural development institutions
B. GramNet	2. Establishing Wi-Fi hotspots in rural areas
C. NagarNet	3. Providing 1Gbps to Gram Panchayats
D. JanWiFi	4. Establishing public Wi-Fi hotspots in urban areas

Select the correct answer using the code given below:

	A	B	C	D
(a)	1	2	4	3
(b)	3	1	4	2
(c)	2	3	4	1
(d)	1	3	2	4

23. Consider the following statements with reference to use of nano technology in health sector:

1. Nanoparticles are effective in drug delivery to specific cells in human body.
2. India does not have any national guidelines for evaluation of nanopharmaceuticals.

Which of the above statements is/are incorrect?

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

24. With reference to nuclear fission, consider the following statements:

1. It is an exothermic reaction releasing huge amount of energy as gamma rays.
2. Spontaneous fission is a type of radioactive decay.
3. The enormous energy released in an atom bomb comes from uncontrolled fission.

Which of the above statements is/are correct?

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

25. With reference to the immersive technologies, consider the following statements:

1. Virtual reality immerses users in a fully artificial digital environment.
2. In Augmented Reality, physical and digital objects co-exist and interact in real time.

Which of the above statements is/are correct?

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

26. With reference to Laws of Robotics, consider the following statements:

1. Isaac Asimov is known to have given the 'Three Laws of Robotics'.
2. The Zeroth law of Robotics of not harming humanity was given by Joseph Engelberger.

Which of the above statements is/are incorrect?

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

27. With reference to recently discovered biosensor technique for detection of Chikungunya virus, consider the following statements:

1. Biosensors are devices used to detect the presence of a biomolecule or a microorganism.
2. Molybdenum disulphide nanosheets are used in this process.

Which of the above statements is/are correct?

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

28. Which of the following is/are method of synthesis of carbon nanotubes?

(a) Laser Method
(b) Chemical Vapour Deposition Method
(c) Arc Method
(d) All of the above

29. Consider the following statements regarding Internet of Things (IoT):

1. It means that all objects in the world being uniquely identifiable, tracked, and connected to the Internet.
2. Radio Frequency Identification (RFID) is one the example of IoT.
3. Recently, Samsung has launched IoT garage in Bengaluru.

Which of the above statements are correct?

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

30. With reference to measles, which one of the following statements is correct?

a) It has been eliminated in the Indian subcontinent.
b) It is a non-communicable disease.
c) It does not cause fatal complications among young children.
d) It is preventable through vaccination.

31. The word 'P null' recently seen in the news is refers to:

a) Polio vaccine
b) Term for controlling pollution
c) Blood group
d) None of the above

32. DeepFake recently seen in the news is:

a) Technique for human DNA synthesis to produce clones
b) Technique for human image synthesis based on artificial intelligence
c) Technique to circulate fake videos on messaging apps.
d) Technique to make fake targets for military practice.

33. In the context of 5G (Fifth generation cellular network technology), consider the following statements:

1. It is a wireless communication technology using microwaves.
2. It has higher latency when compared to 4G.

Which of the statements given above is/are correct?

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

34. Consider the following statements regarding Fixed Dose Combination (FDC) drugs:

1. They are popular in India because of increased efficacy and less cost.
2. Their widespread use makes the human body resistant to treatment.

Which of the statements given above is/are correct?

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

35. Agent Smith , recently seen in news refers to?

a) A highly toxic chemical that prevents the nervous system from working properly, and can be fatal
b) A chemical agent added to pesticides to increase their efficiency
c) A new technique adopted by Indian Intelligence agencies to collect information.
d) A malware that can replace apps on android phones.

36. Microdots, recently seen in news refer to:

a) A text or an image substantially reduced in size onto a small disc to prevent detection by unintended recipients.
b) Tiny semiconductor a few nanometres in size, having optical and electronic properties.
c) A strategy for TB control that has been recognized as a highly efficient and costeffective strategy
d) A new technique to measure the intensity of earthquakes.

37. With reference to the National Mission on Quantum Technologies & Applications (NM-QTA), recently announced in the budget, consider the following statements:

1. Its area of focus will be to address issues concerning national priorities.
2. Its applications include numerical weather prediction, simulations, securing the communications & financial transactions among others.
3. It will be implemented by the Department of Science and Technology.

Which of the statements given above is/are correct?

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

38. StrandHogg, recently seen in news is related to:

a) An asteroid
b) A virus
c) Android vulnerability
d) A new species of Groundhogs

39. Consider the following statements with reference to Purified terephthalic acid (PTA):

1. It is a crucial raw material used to make polyester fabrics.
2. India has imposed definitive anti-dumping duty on all imports of PTA from all ASEAN countries.
3. The use of anti-dumping measures as an instrument of fair competition is permitted by the World Trade Organisation (WTO).

Which of the statements given above is/are correct?

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

40. With reference to superconductivity, consider the following statements:

1. It is a state in which a material shows very high electrical resistance.
2. It finds application in Magnetic Resonance Imaging (MRI).
3. It is possible only at very low temperatures.

Which of the statements given above is/are correct?

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

41. Xenobots, recently seen in news is/are:

a) Artificial intelligence (AI) based Supercomputers
b) Nano robots
c) World's first living robots
d) Half-humanoid robots

42. Consider the following statements:

1. An Asteroid is a small rocky body that orbits the Sun.
2. If an Asteroid enters the Earth's atmosphere, it vapourizes and turns into a Meteoroid.
3. Meteoroids that don't vaporize completely and land on the Earth are called Meteorites.

Which of the statements given above is/are correct?

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

43. Which of the following best describes the Bose-Einstein condensate state of matter?

a) It is a liquid in which atoms have been broken up into free-floating negative electrons and positive ions, atoms that have lost electrons and are left with a positive electric charge.
b) It is a state of matter in which a single atom, heated to a 100 degrees, separates into a or several subatomic particles of a quantum mechanical entity that cannot be described by a wave function.
c) It is a state of matter in which separate atoms or subatomic particles, cooled to near absolute zero, coalesce into a single quantum mechanical entity that can be described by a wave function.
d) It is a gas in which atoms have been broken up into free-floating negative electrons and positive ions, atoms that have lost electrons and are left with a positive electric charge.

44. Turing Test, often seen in the news is related to:
a) Space Launch Vehicles
b) Psychopathic Personality Test
c) Artificial Intelligence
d) Musical Instruments

45. Consider the following statements:
1. A One-Dimensional Barcode is a numeric-only barcode.
2. A Two-Dimensional Barcode is an alphanumeric-only barcode.
3. A Quick Response (QR) code is a one- Dimensional barcode.

Which of the statements given above is/are not correct?
a) 1 and 2 only
b) 2 and 3 only
c) 1 and 3 only
d) 1, 2 and 3

46. ATLAS, CMS, ALICE, and LHCb experiments are related to:
a) Gene editing
b) Particle physics
c) Space observation
d) Thermonuclear energy

47. Which of the following statement about Stephen Hawking is true?
1. Hawking radiation is the radiation that comes out of sun flares
2. Stephen hawking was affected by Amyotrophic lateral sclerosis (ALS)
3. Hawking postulated to No-Hair Theorem
4. Black Hole Entropy and Soft Hair is the name of a paper published in Hawking's name

Select the answer from the codes given below
a) 1 and 4 only
b) 1, 2 and 4 only
c) 2 and 4 only
d) 1, 2, 3 and 4

48. Match Generation Changes with respective features using the codes given below

Generation	Features
A. 1st Gen (1G)	1. Voice + Data
B. 2nd Gen (2G)	2. Analog data transfer
C. 3rd Gen (3G)	3. Data + Voice over Data
D. 4th Gen (4G)	4. Voice +SMS/MMS

Code:

	A	B	C	D
a)	2	1	4	3
b)	2	4	1	3
c)	3	4	1	2
d)	3	1	4	2

49. Anti Retroviral Therapy (ART) is linked to which of the following diseases
a) HIV/AIDS
b) Tuberclosis
c) Kala Azar
d) Polio

50. Netflix, Amazon Prime, is an example of
a) Cable TV
b) Satellite TV
c) Internet Protocol TV
d) Over-The-Top media services (OTT)

51. Consider the following terms
1. FASER experiment
2. Higgs Boson particle
3. Quark and Gluon
4. Proton Accelerator

Above terms are associated with which of the following experiments
a) LIGO
b) CERN
c) Belle II
d) Juno

52. ISRO develops indigenous Hyperspectral Imaging Satellite or HySIS. HySIS will be a
a) Nano Satellite
b) Remote Sensing Satellite
c) Earth Observation Satellite
d) Lunar Imaging Satellite

53. Consider the following terms

1. SpiNNaker,
2. Summit,
3. Titan,
4. TaihuLight,
5. EKA

The above mentioned terms are associated with

a) Genetic Engineering
b) Super Computing
c) Space Technology
d) Optic Communication

54. According to WHO, the Nipah virus infection is a newly emerging zoonosis, that is, a disease transmitted from animals to humans. Which of the following animals are natural host and intermediate hosts ?

a) Fruit Bat and Pigs
b) Rats and Pigs
c) Fruit Bat and Rats
d) Dogs and Pigs

55. Recently UNESCO celebrated International Year of the Periodic Table of Chemical Elements (IYPT2019) to commemorate Mendeleev way of arranging chemical elements. Which of the following statement is true about periodic table?

1. The properties of the elements are periodic functions of their atomic mass
2. In modern Periodic table, the number of periods is 7
3. In modern periodic table, the number of groups is 18
4. The names of the elements are announced by IUPAC

Select the answer from the codes given below

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

56. Secretly using of your computing device for mining cryptocurrency by installing a program without your knowledge is called

a) Cryptomining
b) Cryptovertising
c) Cryptosabotage
d) Cryptojacking

57. Which of the following are correct about Super Conductors?

1. Superconductors are materials that conduct electricity with resistance
2. Superconductors can carry electricity efficiently without losing energy
3. Superconductors do not allow magnetic fields to pass through them

Select the answer from the below codes

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

58. Match List I and List II and select the correct answer using the code given below

Internet Service	Company
A. Project loon	1. Facebook
B. Aquila Drone	2. Microsoft
C. Starlink	3. Google
D. Airband	4. SpaceX

Code:

	A	B	C	D
a)	2	1	4	3
b)	2	4	1	3
c)	3	4	1	2
d)	3	1	4	2

59. The world's third advanced Laser Interferometer Gravitational wave Observatory (LIGO-India) will be set up in India is planned to setup at

a) Jammu and Kashmir
b) Maharashtra
c) Andhra Pradesh
d) Sikkim

60. Nasa's New Horizon project went to provide some information on 'Ultima Thule, Kuiper Belt and Oort Cloud'. These objects are located

a) Between Sun and Earth
b) Between Mars and Juipter (Asteroid Belt)
c) Around Saturn
d) Beyond Neptune

61. Consider the following statements regarding 'Hydrothermal Carbonization Technology (HCT)':

1. It can convert municipal solid waste to biofuel.
2. It can be used to generate energy from solid waste with high moisture content.
3. It does not give out any waste at the end of the process.

Which of the statements given above is/are correct?

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

62. Which of the following statements is/are correct regarding 'GM crops'?

1. Bt. cotton is the only Genetically Modified (GM) crop approved in India.
2. GM crops are regulated under the Environment (Protection) Act, 1986.

Select the correct answer using the code given below:

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

63. Consider the following statements regarding 'The Genetic Engineering Appraisal Committee (GEAC)':

1. It functions under the Ministry of Science and technology.
2. It appraise proposals relating to release of genetically engineered organisms.

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

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

64. Recently India has decided to sign a 'Polar Science Cooperation Agreement' with which of the following countries?

a) Sweden
b) Norway
c) Canada
d) Finland

65. Consider the following statements regarding Rotavirus

1. It is a contagious disease that spreads easily.
2. Rotavirus Vaccine is included in Universal Immunisation Programme.
3. Rotovac 5D is a new Rotavirus Vaccine invented to tackle Diarrhoea.

Which of the statements given above is/are correct?

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

66. Consider the following statements regarding Yescarta:

1. It is a gene therapy for HIV- AIDS.
2. This therapy uses CAR-T technology.
3. U.S approved a Yescarta therapy to treat adults.
4. Yescarta was designated as an 'orphan medicine'.

Which of the statements given above is/are correct?

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

67. Which of the following can be considered as the potential benefits of Gene Editing?

1. It can be used to treat many human diseases & genetic disorders
2. It can bolster disease resistance in humans & increase life span.
3. It can be used to protect endangered species or bring to life extinct species.
4. It can be used to grow healthier food via fortification.

Select the correct answer using the code given below:

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

68. Recently the Government of India has notified rules for the fixation of Microdots Identifiers on vehicles. Which of the following statements are correct regarding the Microdots/Microdot Technology used in vehicles?

1. Microdots are nearly invisible that can be read physically with a microscope and identified with an ultraviolet light source.
2. The use of this technology will help check the theft of vehicles and also the use of fake spare parts.
3. The microdots and adhesive will become a permanent fixture that cannot be removed without damaging the vehicle itself.

Select the correct answer using the code given below:

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

69. Recently we have seen the word 'CRISPRCas9', which of the following statements is/are correct regarding this?

1. By this technique we can edit parts of genome by removing or adding section of DNA sequence.
2. Cas9 acts as a pair of 'molecular scissors' which cut the genome at certain locations.
3. g-RNA responsible to guided the Protein-9 to specific location on DNA.

Select the correct answer using the code given below:

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

70. Proton therapy, as seen recently in news, is used in the treatment of:

(a) Cancer
(b) Tuberculosis
(c) AIDS
(d) Zika virus

71. Consider the following statements regarding Varunastra:

1. It is an indigenously-built heavyweight anti-submarine nuclear torpedo.
2. It has been developed by the Naval Science and Technology Laboratory (NTSL).

Which of the above statements is/are incorrect?

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

72. ISRO plans to send humans to space as part of Gaganyaan Mission by 2022. In this regard, consider the following statements:

1. India will become the 3rd country after Russia and USA to launch human spaceflight mission.
2. ISRO has signed a Memorandum of Understanding (MoU) with NASA for a short visit to International Space Station as a training mission.

Which of the above statements is/are correct?

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

73. Strum Ataka, seen recently in news, is a:

(a) Zika virus vaccine
(b) Military exercise between India and Mongolia
(c) Anti-Submarine electric torpedo
(d) Anti-tank missile

74. Consider the following statements about the term Eugenics :

1. It is the science of improving the human species.
2. It encourages healthy, superior people to reproduce and discouraged the reproduction of the mentally challenged or anyone who fell outside the social norm.

Which of the above statements is/are correct?

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

75. Which of the following statements is/are correct regarding Ramanujan Machine?

1. It is an algorithm that performs an unconventional function.
2. It has developed by scientists from Israel Institution of Technology.

Select the correct answer using the code given below:

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

76. Match the following:

List-I	List-II
A. Tamarind	1. Lactic acid
B. Sour milk (Curd)	2. Methanoic acid
C. Nettle sting	3. Oxalic Acid
D. Tomato	4. Tartaric acid

Select the correct code using the code given below:

	A	B	C	D
(a)	2	3	4	1
(b)	2	4	1	3
(c)	1	3	4	2
(d)	4	1	2	3

77. Which of the following processes indicate chemical change?

1. Change of state
2. Change of colour
3. Evolution of gas
4. Change in Temperature

Select the correct answer using the code given below:

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

78. Consider the statements about the effect of temperature on particle of matter:

1. The energy supplied by heat overcomes the forces of attraction between the particles
2. The particles leave their fixed positions and start moving more freely
3. There is no change in temperature at a fixed pressure when the state of matter changes

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

79. Which of the following is/are correctly matched?

Vision Defect	Correction Lens
1. Myopia	: Bifocal lens
2. Hypermetropia	: Convex lens
3. Presbyopia	: Concave lens

Select the correct answer using the code given below:

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

80. 22 Carat of a pure gold means:

(a) 22 parts of pure gold is alloyed with 1 parts of either copper or silver
(b) 22 parts of pure gold is alloyed with 2 part of either copper or silver
(c) 22 parts of pure gold is alloyed with 3 part of either copper or silver
(d) 22 parts of pure gold is alloyed with 4 part of either copper or silver

81. Which of the following diseases is/are caused by Bacteria?

1. Polio
2. Typhoid
3. Malaria

Select the correct answer using the code given below:

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

82. Consider the following statements regarding Sound:

1. Sound waves are longitudinal.
2. Sound can travel with and without medium .
3. The loudness of sound is expressed in a unit called decibel (dB).

Which of the above statements is/are correct?

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

83. Which of the following are known as the 'suicide bags' of the cell?

(a) Ribosome
(b) Lysosome
(c) Both (a) and (b)
(d) Neither (a) nor (b)

84. Consider the following statements regarding Vegetative Propagation of Plants:

1. All plants produced through vegetative propagation are genetically similar to the parent plant.
2. Plants raised by vegetative propagation bear flowers and fruits quicker than those produced from seeds.

Select the correct answer using the code given below:

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

85. Arrange the following waves in decreasing order of their frequencies:

1. X-rays
2. Radiowaves
3. UV waves
4. Green Light

Select the correct answer using the code given below:

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

86. With reference to the Anti-microbial resistance, consider the following statements:

1. It is a gain of susceptibility of bacteria to the killing properties of an antibiotic agent.
2. It may result in the formation of super bugs.

Which of the following statement is/are correct?

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

87. Plants which grown in waters of high salinity are called:

(a) Xerophytes
(b) Mesophytes
(c) Hygrophytes
(d) Halophytes

88. Consider the following statements regarding metals:

1. The property of metals by which they can be beaten into thin sheets is called malleability.
2. The property of metal by which it can be drawn into wires is called ductility.
3. Metals are not sonorous.

Which of the above statements is/are correct?

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

89. Consider the following statements :

1. Coal, petroleum and natural gas are Exhaustible Natural Resources.
2. Sunlight and air are Inexhaustible Natural Resources.
3. Coal gas is obtained during the processing of coal to get coke.

Which of the above statements is/are correct?

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

90. Which of the following is the real-world application of the Doppler Effect?

(a) Medical Diagnosis
(b) Weather Forecasting
(c) Speed Gun
(d) All of the above

91. Consider the following statements regarding the combustion:

1. The highest temperature at which a substance catches fire is called its ignition temperature.
2. The amount of heat energy produced on complete combustion of 1 kg of a fuel is called its calorific value

Which of the above statements is/are correct?

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

92. A person with which of the following blood groups is said to be a universal recipient?

(a) O negative
(b) AB positive
(c) O positive
(d) None of the above

93. Which of the following statements regarding leptons is/are correct?

(a) Neutrinos and electrons are examples of leptons.
(b) They take part in the strong nuclear interactions.
(c) They are always charged particles.
(d) All of the above

94. Consider the following statements regarding blood:

1. Haemoglobin is a red pigment in RBCs which transports oxygen to all the parts of the body.
2. White blood cells (WBC) fight against germs that may enter our body
3. The clot is formed because of the presence of platelets.

Which of the above statements is/are correct?

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

95. Arrange the following in the correct order of taxonomic hierarchy:

1. Genus
2. Class
3. Order
4. Phylum
5. Species

Select the correct answer using the code given below:

(a) 2>1>3>4>5
(b) 4>2>3>1>5
(c) 3>4>2>5>1
(d) 3>2>1>4>5

96. Which of the following is/are related to Vaccination?

(a) Injecting the body with materials that stimulate the body to produce antibodies.
(b) Use of antigens to cure diseases.
(c) Injecting the body with materials that stimulate the body to produce antigens
(d) None of the above

97. Match the following:

List-I	List-II
A. Bryophyte	1. Amphibians of the plant kingdom.
B. Thallophyta	2. Bear naked seeds
C. Angiosperm	3. Flowering plants.
D. Gymnosperm	4. Do not have well differentiated body

Select the correct answer using the code given below:

	A	B	C	D
(a)	2	3	4	1
(b)	3	2	1	3
(c)	1	4	3	2
(d)	4	1	2	3

98. Consider the following statement about Gravitation Force

1. It governs the motion of planets of solar system around the sun
2. The force decreases with increase in distance
3. The force is independent of the mass of the objects

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

99. The speed of light is maximum in:

(a) Vacuum
(b) Air
(c) Water
(d) Equal in all media

100. Consider the following statement about energy:

1. Theoretically, one form of energy can be converted to another form without any loss of energy.
2. Energy can be created but cannot be destroyed.

Which of the above statements is/are correct?

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