

Prelims 2017

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## Prep Series Part - 11

50 QUESTIONS

## GENERAL SCIENCE

(PART - II)

- Q1. Consider the following statements about "Methamphetamine".
  - Unlike drugs such as marijuana, cocaine, and heroin, which are derived from plants, it can be manufactured using a variety of store bought chemicals
  - 2. It is also known as "Ephedrine" or in short, "Meth"
  - 3. Ephedrine is a vital component in cough syrups and nasal decongestants

Which of the statements given above is/are correct? Select the answer from the codes given below:

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) All are correct
- Q2. Hemp (cannabis) is used in which of the following industries?
  - 1. Textile Industry
  - 2. Paper Industry
  - 3. Construction Industry

Select the correct option from the codes given below:

- (a) 1 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) All 1, 2 and 3
- Q3. A fire caused by petrol cannot be extinguished effectively by water because of which of the following reasons?
  - 1. Water and petrol react chemically.

- 2. Water and petrol are immiscible with each other.
- 3. Petrol forms the upper layer and continues to burn
- 4. The flame is too hot for water to cool it.

Select the correct answer using the codes given below:

- (a) 1 and 2 only
- (b) 1, 2 and 3 only
- (c) 2 and 3 only
- (d) 1 and 4 only
- Q4. With reference to efflorescence and deliquescence, consider the following statements:
  - In efflorescence, solid substances absorb water vapour from the atmosphere and are slowly transformed into liquids.
  - 2. In the process of deliquescence, the resulting substances are fluffy and rough

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
- Q5. Which among the following statement is correct about Agni-1 missile?
  - 1. Agni-1 is a surface-to-surface nuclear-capable ballistic missile.
  - 2. It can be programmed with a terrainfollowing system or use GPS to maintain a particular flight path.



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It is a single-stage, solid fuelled missile.

Select the answer using the code given below:

- (a) 1 only
- (b) 1 and 2 only
- (c) 1 and 3 only
- (d) All the above
- Q6. Consider the following statements regarding the cognitive digital radio technology
  - It is a form of wireless communication in which a transceiver can intelligently detect which communication channels are in use and which are not, and instantly move into vacant channels while avoiding occupied ones.
  - The technology was first used by a U.S.based company during Hurricane Katrina so that the affected residents could remain in touch with each other.
  - Terror outfits have modified this technology and created the application "Calculator", which can be downloaded Smartphone's attached to the off-air network created specifically for them.

Which of the above statements is/are correct? Select the answer using the code given below:

- (a) 1 and 3 Only
- (b) 2 and 3 Only
- (c) 1 and 2 Only
- (d) All of the above
- Q7. Identify the correct statements(s).
  - (a) Mutation is a natural process that changes a DNA sequence.
  - (b) Mutation creates slightly different versions of the same genes, called alleles.
  - (c) Genetic variation is useful because it helps populations change over time.
  - (d) All a, b and c
- Q8. A new doppler radar to boost the weather forecasting system in the cyclone prone eastern coast is commissioned in Gopalpur in Odisha. In this context consider the following statements.
  - A. It will be the sixth such radar on the country's east coast. The others are located Chennai, Kolkata. in Machilipatnam, Visakhapatnam and Paradip.
  - B. The radar is indigenously built by Indian Space Research Organization (ISRO) and

Bharat Heavy Electricals Ltd (BHEL).

Which of the statement/s given above is/are correct? Select the answer from the codes given below:

- (a) Only A
- (b) Only B
- (c) Both A and B
- (d) Neither A nor B
- Q9. Consider the following statements.
  - Green biotechnology is biotechnology applied to agricultural processes.
  - White biotechnology is applied to medical processes.
  - Red biotechnology is applied to industrial processes.

Which of the statements given above is/are incorrect?

- (a) 1 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) Neither 1 nor 2 nor 3
- Q10. Identify the greenhouse gases present in Earth's atmosphere from the following -
  - 1. Water vapor
- 2. Carbon dioxide
- 3. Methane
- 4. Nitrous oxide
- 5. Ozone

Select the correct code -

- (a) 1, 2, 3 and 4 only (b) 2, 3, 4 and 5 only
- (c) 1, 3 and 5 only
- (d) 1, 2, 3, 4 and 5
- Q11. Identify the incorrect statement.
  - (a) Bioprocess engineering is the alteration or application of renewable materials to generate value-added products.
  - (b) It encompasses discovery, research. development and the manufacturing and commercialization of products.
  - (c) Products developed include: fuels, food, feed, pharmaceuticals, nutraceuticals and a multitude of value-added biomaterials found in and used by all industries.
  - (d) Neither a nor b nor c
- Q12. Which of the following are the Protozoan Diseases?
  - 1. Amoebiasis
  - 2. Giardiasis
  - African Sleeping Sickness 3.
  - 4. Leishmaniasis



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Malaria

Select the correct code -

- (a) 1, 2, 3 and 4
- (b) 1, 2, 4 and 5 only
- (c) 2, 3 and 4 only
- (d) 1, 2, 3, 4 and 5
- Q13. Which of the following are properties of neutrinos?
  - 1. No charge
  - 2. No mass
  - 3. Speed close to that of light

Select the correct answer using the codes given below:

- (a) 1 and 2 only
- (b) 1 and 3 only
- (c) 2 and 3 only
- (d) 1, 2 and 3
- Q14. With reference to bio-concentration, consider the following statements.
  - Bio-concentration is a process by which chemicals increase within a trophic level in a food chain.
  - 2. Bio-concentration mainly happens via the dietary route.

Which of the statements given above is/are correct? Select the answer from the codes given below:

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2
- Q15. Ultrasonic refers to sound with frequency greater than 20,000 Hz. Ultrasonic can be used for which of the following?
  - 1. Detecting flaws in solids.
  - 2. Destroying micro-organisms.
  - 3. Improving plant growth.

Select the correct answer using the codes given below:

- (a) 1 and 2 only
- (b) 1 and 3 only
- (c) 2 and 3 only
- (d) 1, 2 and 3
- Q16. Carbon monoxide is produced from which of the following?
  - 1. Incomplete burning of fossil fuels.
  - 2. Enteric fermentation in cattle.
  - 3. Oil refineries
  - 4. Automobiles

Select the correct answer using the codes given

#### below:

- (a) 1, 2 and 3 only
- (b) 1, 3 and 4 only
- (c) 2, 3 and 4 only
- (d) 1, 2 and 4 only
- Q17. Consider the following statements.
  - Genetic engineering is the process by which scientists modify the genome of an organism.
  - 2. Creation of genetically modified organisms requires recombinant DNA.
  - Recombinant DNA is a combination of DNA from different organisms or different locations in a given genome that are generally found in nature.
  - 4. Some uses of genetic engineering include improving the nutritional quality of food, creating pest-resistant crops, and creating infection-resistant livestock.

Which of the statements given above are correct?

- (a) 1, 2 and 3 only
- (b) 1, 2 and 4 only
- (c) 3 and 4 only
- (d) All 1, 2, 3 and 4
- Q18. Which of the following statements is/are correct?
  - (a) Optical fiber (or "fiber optic") refers to the medium and the technology associated with the transmission of information as light pulses along a glass or plastic strand or fiber.
  - (b) Optical fiber carries much more information than conventional copper wire and is in general not subject to electromagnetic interference and the need to retransmit signals.
  - (c) Most telephone company's long-distance lines are now made of optical fiber.
  - (d) All a, b and c
- Q19. Consider the following statements.
  - Biotechnology is the use of living systems and organisms to develop or make products, or "any technological application that uses biological systems, living organisms or derivatives thereof, to make or modify products or processes for specific use".



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- For thousands of years, humankind has used biotechnology in agriculture, food production, and medicine.
- 3. The term is largely believed to have been coined by Norman Myers.
- 4. In the late 20th and early 21st century, biotechnology has expanded to include new and diverse sciences such as genomics, recombinant gene techniques, applied immunology, and development of pharmaceutical therapies and diagnostic tests.

Which of the statements given above are correct?

- (a) 1, 2 and 3 only
- (b) 2, 3 and 4 only
- (c) 1, 2 and 4 only
- (d) All 1, 2, 3 and 4
- Q20. Which of the statements given below are correct?
  - Lead poisoning occurs when lead builds up in the body, often over a period of months or years.
  - Children under the age of 6 are especially vulnerable to lead poisoning, which can severely affect mental and physical development.
  - Lead-based paint and lead-contaminated dust in older buildings are the most common sources of lead poisoning in children; other sources include contaminated air, water and soil.
  - Adults who work with batteries, do home renovations or work in auto repair shops are not exposed to lead.

Select the correct code:

- (a) 1, 2 and 3 only
- (b) 3 and 4 only
- (c) 2 and 4 only
- (d) All 1, 2, 3 and 4
- Q21. Which of the following statements is incorrect?
  - (a) A geosynchronous orbit is a geocentric orbit that has the same orbital period as the sidereal rotation period of the Earth.
  - (b) In the special case of the geostationary orbit, an observer on the ground would perceive the satellite as moving and would see it as not a fixed point in the sky.
  - (c) Such orbits are useful for telecommunications relays.

- (d) Synchronous orbits exist around all moons, planets, stars and black holes - unless they rotate so slowly that the orbit would be outside their Hill sphere.
- Q22. Consider the following statements.
  - Gujarat Technological University (GTU) launched e-Raksha Research Centre to fight cybercrime.
  - 2. Centre will encourage research and enhance capability to provide solution for issues related to cyber security.
  - GTU is collaborating with Cyber Peace Foundation (CPF) with the goal of establishing a peaceful and harmonious cyber space through research.
  - The centre will also support Make in India concept by manufacturing routers, switches, firewalls, UTMs (Unified Threat Management) and other network appliances.

Which of the statements given above are correct?

- (a) All 1, 2, 3 and 4
- (b) 1, 2 and 3 only
- (c) 3 and 4 only
- (d) Neither 1 nor 2 nor 3 nor 4
- Q23. Consider the following statements related to Xeno-transplantation.
  - It is the transfer of living cells, tissues and/ or organs from non-human animal species into humans.
  - 2. It studies that how genes affect a person's response to drugs so that customized drugs can be formed.
  - 3. Under this, the micro-organisms are grown on a large scale then the required product is extracted, purified and then marketed.

Which of the above statements is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 2 and 3
- (d) 1 and 3 only
- Q24. Consider the following statements about Hydrogels.
  - Hydrogels are natural proteins that form gelatin-like materials, and contain a lot of water.
  - 2. They can be tuned to attain chemical,



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- biological, mechanical and electrical properties.
- They cannot be used for developing the artificial cells which can be used in tissue formation.

Which of the above statements are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) All of the above
- Q25. Consider the following statements.
  - India's first Polar Remotely Operated Vehicle (PROVe) was successfully deployed in Kongsfjorden Fjord of the Arctic.
  - The vehicle will enable us to understand the polar influence on ocean currents affecting the movement of monsoon winds.

Which among the above statements is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) None of the above
- Q26. Match the following.

LIST I

LISTII

- 1. Quinine
- A. Treat leukemia
- 2. **Digitalis**
- B. Treat malaria
- 3. Vinca Rosea
- C. Treat chronic heart trouble
- Cocaine
- D. Reduce pain

Select the correct code:

1 2 3

- Α С (a) В
- С Α D (b) В
- (c) D Α С В
- С В (d) D Α
- Q27. Cloning is the creation of an organism that is an exact genetic copy of another. Generally three types of cloning technologies has been used by researchers and scientists - which includes?

4

D

- 1. P2 DNA cloning
- Therapeutic cloning 2.
- Reproductive cloning

Select the correct code:

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

- Q28. Consider the following statements about Nisarguna Technology?
  - It is a solid waste management technology developed by BARC.
  - It offers zero garbage and zero effluent and provides high quality manure and methane
  - It is more efficient than traditional biogas 3. plant.

Which of the above statements are incorrect?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) None of the above
- Q29. Identify the correct statement:
  - (a) Navara is a medicinal rice variety
  - (b) It is used in Ayurvedic remedies for rheumatisms, neuromuscular disorders
  - (c) This enjoys geographical status (GT)
  - (d) All of the above
- Q30. Consider the following statements about ENTEROVIRUS 71 (EV71).
  - EV71 is the causative agent of a variety of diseases ranging from hand, foot and disease mouth (HFMD) to severe neurological disorders.
  - India and Indonesia are the two countries in Asia-Pacific region that have not seen any outbreak of EV71 so far.
  - 3. An EV71 infection is usually self-limiting and without residual disability.

Which of the above statements are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) All of the above
- Q31. Consider the following statements about Vector-Borne Diseases (VBDs).
  - VBDs are a group of communicable diseases transmitted by vectors.
  - Japanese encephalitis, kala-azar, filariasis and chikungunya are the only four VBDs found in India.
  - People suffering from diabetes are more susceptible to VBDs.

Which of the above statements are correct?

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



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- Q32. To reduce pollution from plastics, a new biodegradable plastic known as Biopol, is produced industrially, using starch and glucose from plants. The properties are:
  - 1. It is stable in air even when stored in humid conditions.
  - 2. It is insoluble in water.
  - 3. It has good resistance to acids and bases.
  - 4. It is biocompatible thus suitable for medical applications.

Which of the statements given above are correct?

- (a) 1, 3 and 4 only
- (b) 1, 2 and 3 only
- (c) 1, 2 and 4 only
- (d) All of the above
- Q33. A fixed-dose combination (FDC) is a formulation including two or more active pharmaceutical ingredients (APIs) combined in a single dosage form, which is manufactured and distributed in certain respective fixed doses. Fixed dose drug combination advantages are:
  - Procurement, management and handling of drugs get simplified.
  - Eliminates drug shortages by simplifying drug storage and handling, and thus lowers risk of being "out of stock".
  - 3. Drug interactions may lead to alteration of the therapeutic effect.

Which of the above statements are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) All of the above
- Q34. Consider the following statements.
  - Golden rice is a variety of Oryza Sativa rice produced through genetic engineering to biosynthesize beta-carotene, a precursor of pro-vitamin-C in the edible parts of rice.
  - Golden rice was developed as fortified food to be used in areas where there is a shortage of dietary vitamin - C.
  - A new variety called Golden Rice-2 has been also announced which produces much more beta -carotene than the original variety of golden rice.

Which of the above statements is/are incorrect?

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

- Q35. Red light is used in railway signals for "stop". The reason behind using red light for this purpose is
  - (a) Red lights have always been used as a signal of danger.
  - (b) The wavelength of red light is maximum in visible light spectrum and hence dispersion is minimum, so that it is visible from maximum distance.
  - (c) The wavelength of red light is minimum in visible light spectrum and hence dispersion is minimum, so that it is visible from maximum distance.
  - (d) The wavelength of red light is maximum in visible light spectrum and hence diffraction is minimum, so that it is visible from maximum distance.
- Q36. A clean technology involves...
  - 1. Green transportation
  - 2. Switching an energy source from coal or other fossil fuels
  - 3. Green Chemistry
  - 4. Reducing carbon footprint

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 1, 2 and 3 only
- (c) 2, 3 and 4 only
- (d) All of the above
- Q37. Carbohydrates, the most abundant biomolecules on earth, are produced by -
  - (a) Fungi, algae and green plants' cells
  - (b) All bacteria, fungi and algae
  - (c) Some bacteria, algae and green plants' cells
  - (d) Viruses, fungi and bacteria
- Q38. Consider the following statements about Holography.
  - Holography is a technique which enables three-dimensional images (holograms) to be made.
  - 2. A Hologram when looked from various angles, projects different perspectives.
  - 3. The holographic recording itself is an image.

Which of the above statements are correct?

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

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- (c) 1 and 3 only
- (d) All of the above
- Q39. What is common to the techniques (i) in vitro fertilisation, (ii) Cryo preservation and, (iii) tissue culture?
  - (a) All are in situ conservation methods.
  - (b) All are ex situ conservation methods.
  - (c) All require ultra modern equipment and large space.
  - (d) All of the above
- Q40. Consider the following statements.
  - Gene Xpert MTB/RIF molecular test, Hain Genotype and MGIT liquid culture are among the tests recently approved by WHO to diagnose the active TB.
  - 2. Rifampicin is one of the first line drugs given to TB patients.

Which of the statements given above is/are incorrect?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) None of these
- Q41. Consider the following statements:

AIDS is not transmitted

- By mosquitoes and other blood sucking insects.
- 2. By a sexual intercourse
- 3. Across the placenta.

Select the correct code with true statements.

- (a) 1 and 2 only
- (b) 1 only
- (c) 1 and 3 only
- (d) All 1, 2 and 3
- Q42. Consider the following statements regarding Scorpene-class submarine
  - A. The Scorpène class submarines are a class of diesel-electric attack submarine jointly developed by the French DCN and the Spanish company Navantia.
  - B. It features diesel propulsion and an additional air-independent propulsion (AIP) system.

Which of the statements given above is/are correct? Select the answer from the codes given below:

- (a) A only
- (b) B only
- (c) Both A and B
- (d) Neither A nor B
- Q43. Consider the following statements regarding Phyto-chemicals.
  - They are present naturally in plants and are known to have health benefits like

- prevention of heart diseases, diabetes.
- 2. They are highly nutritious and is rich in vitamin C.
- Some of them are responsible for color and other organoleptic properties, such as the deep purple of blueberries and the smell of garlic.

Which of them are true?

- (a) 1 and 3 only
- (b) 1 and 2 only
- (c) 2 and 3 only
- (d) All the above
- Q44. Consider the following regarding the Middle East Respiratory Syndrome (MERS).
  - MERS virus was discovered in 2012 and has mostly been centred in Saudi Arabia.
  - 2. The virus belongs to the family of corona viruses that includes the common cold and SARS, and can cause fever, breathing problems, pneumonia and kidney failure.
  - The virus is thought to be primarily acquired through contact with Birds, but it can also spread from human fluids and droplets.

Which of the statements given above is/are correct? Select the answer from the codes given below.

- (a) 1 only
- (b) 1 and 2 only
- (c) 1 and 3 only
- (d) All 1, 2 and 3
- Q45. Union Government launched an e portal called MADAD. In this context, consider the following statements:
  - A. MADAD is an online grievances monitoring system to redress consular grievances of the foreign citizens living in India promptly with a high degree of "accountability"
  - B. The authorities would be assigned responsibility through a colour-coded dashboard red-amber-green that would change colour if the response in not given in a stipulated time.

Which of the statements given above is/are correct? Select the correct answer from the codes given below:

- (a) A only
- (b) B only
- (c) Both A and B
- (d) Neither A nor B
- Q46. Which of the following gases and substances is/ are responsible for Ozone layer Depletion?
  - 1. PFC
- 2. CFC
- 3. Carbon dioxide
- 4. Nitrous oxide



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Select the correct answer from the codes given below:

- (a) 1 and 2 only
- (b) 1 and 3 only
- (c) 1, 2 and 4 only
- (d) All the above
- Q47. In Vitro Fertilization is the process of fertilization by manually combining an egg and sperm in a laboratory dish, and then transferring the embryo to the uterus. It can be used in which of the following cases?
  - 1. Male factor infertility including decreased sperm count or sperm motility.
  - 2. Women with ovulation disorders, premature ovarian failure, uterine fibroids.
  - 3. Individuals with a genetic disorder.
  - 4. Designer babies as in the case of Three Parent Babies.

Select the correct answer from the codes given below:

- (a) 1, 3 and 4 only
- (b) 2, 3 and 4 only
- (c) 1, 2 and 4 only
- (d) All the above
- Q48. Biodiesel can be produced from which among the following?
  - 1. Jatropa
- 2. Pongamia Pinnata
- 3. Sunflower
- 4. Rape Seeds

Select the correct answer from the codes given below:

- (a) 1 and 2 only
- (b) 1, 2 and 4 only
- (c) 1 only
- (d) All the above
- Q49. Consider the following statements regarding Graphite.
  - 1. Graphite is a bad conductor of heat and electricity.
  - 2. Chemically, graphite is slightly more reactive than diamond.
  - Carbon atoms are arranged in flat planes of hexagonal rings stacked on one another.

Select the correct answer from the codes given below:

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 3 only
- (d) All the above
- Q50. What is Z Mapp?
  - (a) It is an application which allows the mapping of the areas using GPS.
  - (b) It is software developed to stop hacking.
  - (c) It is a drug for treatment of Ebola virus.
  - (d) It is a rover by US for Mars exploration.

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