

- Q001: The Air (Prevention and Control of Pollution) Act, 1981 has \_\_\_ chapters  
(A) 24 (B) 14 (C) 4 (D) 7
- Q002: When is earth day observed?  
(A) 20 March (B) 24 September (C) 5 June (D) 22 April
- Q003: Which national park in India has set up the country's first quarantine facility for animals?  
(A) Ranthambore National Park (B) Kaziranga National Park  
(C) Jim Corbett Park (D) Gir Forest National Park
- Q004: Any project or activity specified in Category 'B' will be treated as Category 'A', if it is located in whole or in part within 10 km from the boundary of certain areas. Which of the following is **not** one of these areas?  
(A) International boundary (B) Inter-city boundary  
(C) Critically polluted area as per CPCB (D) Protected area notified under Wildlife Act
- Q005: Under the current EIA notification, which is the 4<sup>th</sup> stage in the process of granting environmental clearance for new projects?  
(A) Prediction (B) Scoping (C) Appraisal (D) Screening
- Q006: Many chemicals are used in a conventional water treatment plant such as Alum, PAC, Chlorine, etc. Which of the following describes what is Alum?  
(A) Catalyst (B) Flocculent (C) Disinfectant (D) Coagulant
- Q007: As per CPHEEO, Sanitary landfill should be constructed at minimum \_\_\_ distance from habitation?  
(A) 300 m (B) 500 m (C) 400 m (D) 200 m
- Q008: Municipal sewage sludge can be used as a fertilizer but is rendered unsuitable by presence of which of the following contaminants?  
(A) Nitrates (B) Organic matter (C) Phosphates (D) Heavy metals
- Q009: Particles of what size are filtered by the nasal passage?  
(A) >1 mm (B) >50  $\mu\text{m}$  (C) >500  $\mu\text{m}$  (D) >10  $\mu\text{m}$
- Q010: Which one of the following is **not** a site for in-situ method of conservation of flora?  
(A) Wildlife sanctuary (B) Biosphere reserve (C) Botanical garden (D) National park
- Q011: Which of the following plume prevails under stable atmospheric conditions?  
(A) Fanning (B) Fumigating (C) Neutral (D) Lofting
- Q012: Hardness in water is due to certain dissolved elements in water and tends to affect the lathering of soap. The permanent hardness of water is caused by the presence of which of the following?  
(A) Chlorides and sulfates of calcium and magnesium  
(B) Carbonates and chlorides of sodium and potassium  
(C) Phosphates of sodium and potassium  
(D) Bicarbonates of calcium and magnesium
- Q013: Who was awarded for her achievements in mountaineering on the International Day of Women 2019?  
(A) Poonam Yadav (B) Asha Jain (C) Poonam Sharma (D) Asha Jhajharia
- Q014: Winter rain in Rajasthan is known as:  
(A) Mawat (B) Norwester (C) Kal Baisakhi (D) Mango Showers

- Q015: Characterization of Municipal solid waste is done through \_\_\_\_ method  
(A) Ultimate (B) Quartering (C) Proximate (D) Chemical
- Q016: UN Climate Change Conference was held in 2018 at:  
(A) Paris (B) Katowice (C) Geneva (D) Bonn
- Q017: What does the aerodynamic diameter of an aerosol indicate?  
(A) Average diameter of aerosol particles present in unit volume of air  
(B) Maximum size of aerosol particle that can float in the air  
(C) Equivalent diameter of a sphere having same volume as that of the aerosol  
(D) Size of the aerosol particle when floating in air
- Q018: From which district of Rajasthan does the Tropic of Cancer pass through?  
(A) Jalore (B) Kota (C) Jaisalmer (D) Banswara
- Q019: How many AQI categories are defined in the report on National Air Quality Index published by CPCB?  
(A) 8 (B) 5 (C) 4 (D) 6
- Q020: The major difference between activated sludge systems and aerated lagoons is that  
(A) Aerated lagoon is a batch process (B) Aerated lagoon is an attached growth process  
(C) In aerated lagoons, settling tanks and sludge recirculation are absent.  
(D) Aerated lagoon does not require external aeration
- Q021: The Leopold Matrix lists \_\_\_\_ specified actions and \_\_\_\_ Environmental items.  
(A) 100, 90 (B) 90, 100 (C) 99, 100 (D) 100, 99
- Q022: The recently discovered new height of Mt. Everest is 8848.86 m above the sea level. If the atmospheric lapse rate is 6 Kelvin per 1000 m and is maintained till the tip of the Mt. Everest and the temperature of the Earth at mean sea level is 25°C, then the air temperature at the tip of the Mt. Everest is \_\_\_\_.  
(A) -28.09°C (B) -18.09°C (C) -38.09°C (D) -8.09°C
- Q023: Which system/body recovers about half of recyclables generated by household in India?  
(A) Waste recycling center (B) Kabadi system and waste pickers  
(C) Urban Local Bodies (D) Municipality/Nagar Nigam
- Q024: Co-processing of municipal solid waste fraction, which is non-biodegradable, non-recyclable is suitably done if the calorific value of the waste is  
(A) More than 1500 kcal/kg without adding supplementary fuel  
(B) Less than 1500 kcal/kg after adding supplementary fuel  
(C) More than 500 kcal/kg after adding supplementary fuel  
(D) Less than 500 kcal/kg without adding supplementary fuel
- Q025: In which state is the Indian Railways constructing the world's tallest pier Bridge?  
(A) Manipur (B) Uttarakhand (C) Mizoram (D) Assam
- Q026: As per CPHEEO manual, an acceptable value of the weir loading rate for primary clarifier design, considering an average flow condition, is \_\_\_\_ m<sup>3</sup>/m/day  
(A) 400 (B) 50 (C) 200 (D) 125
- Q027: As per SWM Rules, horticulture waste from parks and gardens should be:  
(A) Collected along with the MSW and treated at disposal site  
(B) Collected and treated chemically (C) Collected separately and treated onsite  
(D) Collected and treated offsite

Q028: As per CPCB, the used masks, gloves and tissues or swabs contaminated with blood / body fluids of COVID-19 patients, including used syringes, medicines, etc., if any generated should be treated as:

- (A) Municipal solid waste (B) Hazardous waste  
(C) Infective waste (D) Biomedical waste

Q029: Drinking Water Quality is assessed in terms of its physical, chemical, microbiological, and radiological parameters as defined in the Standard Specification of Drinking Water Quality published by Bureau of Indian Standards (BIS). Which of the following is this document?

- (A) IS-10500:2012 (B) IS-16075:2015 (C) IS-1172:1993 (D) IS-2296:1982

Q030: As per the EIA Notification 2006, the validity of EC for River Valley Project remains for

- (A) 5 years (B) 15 years (C) 25 years (D) 10 years

Q031: For effective composting of municipal solid waste, moisture content of the waste should be

- (A) Less than 12% by weight (B) Between 12 to 18% by weight  
(C) More than 60% by weight (D) Between 45 to 55% by weight

Q032: In setting up a wastewater treatment plant, based on ASP, which of the following sequences is correct? Here A is Aeration Tank, B is Secondary Clarifier, C is Equalization Tank, and D is Grit Chamber

- (A) C-D-A-B (B) D-C-A-B (C) A-B-C-D (D) B-A-C-D

Q033: According to National Ambient Air Quality Standards, the annual average concentration of Nitrogen Dioxide (NO<sub>2</sub>), in µg/m<sup>3</sup>, in ecologically sensitive areas, as notified by Government of India is:

- (A) 40 (B) 80 (C) 30 (D) 20

Q034: Field capacity in a waste sample is defined as

- (A) The moisture present in the sample expressed as percentage of the wet weight  
(B) The maximum amount of moisture that can be retained in the sample subject to gravitational pull  
(C) The maximum amount of water that comes out from the sample subject to gravitational pull  
(D) The volume of air voids present in the sample

Q035: Central Pollution Control Board has specified use-based classification of surface waters in India. There are five categories A, B, C, D, and E defined in the classification. Use of river as drinking water source without conventional treatment but after disinfection will be which class / category according to above classification?

- (A) C (B) E (C) D (D) A

Q036: As an approximate percentage, what part of area of India, does Rajasthan cover?

- (A) 10.4% (B) 2.3 % (C) 17.3% (D) 5.3%

Q037: Which of the following technologies is based on phytoremediation principle?

- (A) SBR (B) ASP  
(C) Constructed wetlands (D) Aerated lagoons

Q038: A tailor had a number of shirt pieces to cut from a roll of fabric. He cut each roll of equal length into 10 pieces. He cut at the rate of 45 cuts a minute. How many rolls would be cut in 24 minutes?

- (A) 45 (B) 120 (C) 450 (D) 240

Q039: In wind analysis the 'Richardson number' indicates?

- (A) Mechanical turbulence and convective heat production  
(B) Convective heat production only  
(C) Mechanical turbulence only  
(D) Critical fluid energy

- Q040: The stoichiometric oxygen requirement for biological oxidation of ammonia to nitrate is \_\_\_\_ g of O<sub>2</sub> per g of ammonia removed  
(A) 8.00 (B) 4.57 (C) 0.25 (D) 6.50
- Q041: Indian Navy Day is celebrated on  
(A) 4 December (B) 15 August (C) 4 July (D) 31 January
- Q042: At a municipal solid waste management facility the Trommel Screens are used for  
(A) Separating light materials from heavy (B) Separating non-ferrous metals  
(C) Separating ferrous metals (D) Separation as per the size
- Q043: Sun and Earth both behave as a black body with black body temperatures given as 6000K for Sun and correspondingly for Earth as 298K. The ratio of the wavelengths corresponding to the maximum amount of radiations emitted by the Sun to that of the Earth comes out to be  
(A) 405.387 (B) 0.049 (C)  $2.4 \times 10^{-3}$  (D) 20.134
- Q044: Which of the following scattering phenomena is responsible for the blue colour of the sky?  
(A) Non-selective scattering (B) Mie scattering  
(C) Rayleigh scattering (D) Diffraction
- Q045: If the average temperature of the sun is increased, the wavelength of peak solar radiation would:  
(A) Shift to a shorter wavelength (B) Impossible to tell from given information  
(C) Shift to a longer wavelength (D) Remain the same
- Q046: Which of the following is **not** a natural hazard?  
(A) Tsunami (B) Volcanoes (C) Climate Change (D) Earthquake
- Q047: Who is the only Indian Actor to have featured in the TIME magazines list of "100 most influential people of 2020"?  
(A) Akshay Kumar (B) Ayushmann Khurrana  
(C) Rajnikant (D) Shahrukh Khan
- Q048: Which of the following statement(s) is/are correct about Lagoons and backwaters?  
I. They are coastal lakes which have their connection with the sea through small openings  
II. They exhibit a gradient in salinity from freshwater to marine depending upon the extent of influence of the sea water.  
(A) Both I and II (B) Only I (C) Neither I nor II (D) Only II
- Q049: Which of the following is **not** an advance thermal treatment technique?  
(A) Plasma systems (B) Mass burning (C) Pyrolysis (D) Gasification
- Q050: For an infinite line source Gaussian model, for a constant emission rate, the concentration in cross wind direction for a given x-coordinate can be stated as:  
(A) independent of y-coordinate  
(B) increases with +y direction and decreases with -y direction  
(C) increases with -y direction and decreases with +y direction  
(D) decreases exponentially with y-direction
- Q051: Which one of the following groups of animals belongs to the category of endangered species?  
(A) Snow Leopard, Swamp Deer, Rhesus Monkey and Saras (Crane)  
(B) Great Indian Bustard, Musk Deer, Red Panda and Asiatic Wild Ass  
(C) Lion-tailed Macaque, Blue Bull, Hanuman Langur and Cheetal  
(D) Kashmir Stag, Cheetal, Blue Bull and Great Indian Bustard

Q052: The 5-day BOD ( $BOD_5$ ) of a wastewater sample is calculated as 100 mg/L. What is the ultimate  $BOD_u$  at 20°C if  $k_{20} = 0.2 \text{ day}^{-1}$ ?

- (A) 100 mg/L                      (B) 158 mg/L                      (C) 168 mg/L                      (D) 200 mg/L

Q053: Which is the state bird of Rajasthan?

- (A) The Peacock                      (B) The Great Indian Bustard  
(C) The Parrot                      (D) Ostrich

Q054: Which river of Rajasthan is known as 'Van Ki Asha' (Hope of the forest)?

- (A) Chambal                      (B) Luni                      (C) Banas                      (D) Mahi

Q055: Sloughing is the process in which

- (A) Re-establishment of biofilm due to high organic loading  
(B) Endogenous metabolism occurs at the biofilm surface  
(C) Weakening of attached biofilm occurs due to shearing action of wastewater  
(D) Microorganisms grow in dense films on reaction with organic matter

Q056: Which of the following is **not** a consequence of global warming?

- (A) Increased storm frequency and intensity                      (B) Thickening of ice cap at the poles  
(C) Rising sea level                      (D) Worsening health effects

Q057: Which of the following processes is **not** simulated in Air Quality Modelling (AQM)?

- (A) Advection                      (B) Diffusion                      (C) Removal                      (D) Evapo-transpiration

Q058: In which one among the following categories of protected areas in India are local people **not** allowed to collect and use the biomass?

- (A) Biosphere Reserves                      (B) National Parks  
(C) Wildlife Sanctuaries                      (D) Wetlands declared under Ramsar Convention

Q059: Diophantus's (Often known as the father of Algebra) youth lasted one sixth of his life. He grew a beard after one twelfth more. After one seventh more of his life, he married. 5 years later, he and his wife had a son. The son lived exactly one half as long as his father, and Diophantus died four years after his son. How many years did Diophantus live?

- (A) 74 years                      (B) 84 years                      (C) 64 years                      (D) 104 years

Q060: A fabric filter is treating 30,000 cubic feet per minute of air (acfm) with an average air to cloth ratio of 2 ft/min. The bags are 8.0 inches in diameter and 12 feet long. Estimate the number of bags in the baghouse closest to the computed value

- (A) 1200 bags                      (B) 80 bags                      (C) 200 bags                      (D) 600 bags

Q061: In the field of meteorology a "tetroon" is a tool used to study \_\_\_\_\_

- (A) Pressure variations                      (B) Temperature deviations  
(C) Wind patterns                      (D) Humidity

Q062: The National Environmental Policy Act (NEPA) of 1969 (Pub. L. 91-190) of USA became effective on

- (A) January 1, 1969                      (B) December 31, 1970  
(C) January 1, 1970                      (D) December 31, 1969

Q063: Type 1 plastic (polyethylene terephthalate) is commonly found in

- (A) Irrigation pipes                      (B) Shopping bags  
(C) Soft drinks and water bottles                      (D) Laundry detergent bottles

Q064: According to CPHEEO Manual, recommended design range for velocity gradient (G per second) for mechanical flash mixers is:

- (A) 2000 – 4000                      (B) 1 – 10                      (C) 300 – 900                      (D) 10 – 75

Q065: Which of the following statements is **not** correct?

- (A) Dioxins and furans are extremely difficult and costly to measure.
- (B) The presence of chlorinated hydrocarbons like PVC in our waste results in the release of dioxins and furans when the waste is burnt at more than 950°C.
- (C) The presence of chlorinated hydrocarbons like PVC in our waste results in the release of dioxins and furans when the waste is burnt at less than 850°C.
- (D) Dioxins and furans are among the most dangerous chemical agents. They are known to be carcinogenic and can lead to impairment of immune, endocrine, nervous, and reproductive systems.

Q066: Which of the following is **not** the tributary of Banas River?

- (A) Mansi
- (B) Kothari
- (C) Khari
- (D) Morel

Q067: COD to BOD ratio for sewage (municipal wastewater) typically lies in the range of

- (A) 10.1 - 11.2
- (B) 1.6 - 1.9
- (C) 4.6 - 5.2
- (D) 8.5 - 9.2

Q068: A PM<sub>10</sub> sampler runs for 24 hours; at a flow rate of 1.1 m<sup>3</sup>/min for first 12 hours and at 0.9 m<sup>3</sup>/min for last 12 hours due to pressure drop. Under the same environmental conditions, the tare weight of the filter was 4.800 g, and final weight after the sampling (i.e. with PM<sub>10</sub>) was 4.809 g. What is the 24-hour average PM<sub>10</sub> concentration, in µg/m<sup>3</sup>, in the air?

- (A) 9.25
- (B) 6.25
- (C) 7.55
- (D) 4.95

Q069: Which metals can be recovered from mobile phones?

- (A) Copper, glass, Lead, steel
- (B) Copper, silver, gold, palladium
- (C) Copper, lead, iron, tin
- (D) Copper, tin, indium

Q070: Which one of the following correctly represents process options that can be used for energy recovery from waste (i.e., conversion of waste material into usable heat, electricity, or fuel)?

- (A) Stabilization, neutralization, gasification, pyrolysis, anaerobic digestion, landfilling
- (B) Material recovery, gasification, pyrolysis, aerobic composting, neutralization
- (C) Combustion, gasification, pyrolysis, anaerobic digestion
- (D) Combustion, gasification, pyrolysis, aerobic digestion, landfilling

Q071: The contaminant that adheres to the porous material is called

- (A) Adsorbent
- (B) Sorbate
- (C) Sorption
- (D) Sorbent

Q072: If the absolute temperature of a black body becomes half, the maximum energy emitted by the black body changes by a factor of \_\_\_\_.

- (A) 1/16
- (B) 16
- (C) 1/4
- (D) 4

Q073: When Environmental Lapse Rate (ELR) is less than Adiabatic Lapse Rate (ALR), then which of the following occurs?

- (A) Neutral lapse rate
- (B) Adiabatic lapse rate
- (C) Sub adiabatic lapse rate
- (D) Super adiabatic lapse rate

Q074: Which is the largest source for production of nitrous oxide?

- (A) Fossil fuel combustion
- (B) Fertilizer industry
- (C) Bacterial action
- (D) Chemical industry

Q075: If mankind is able to stop the rise of earth's temperature and stabilize it, which of the statements is true?

- (A) Incoming energy exceeds outgoing energy in the earth system
- (B) Incoming or outgoing energy has no relation with earth's temperature
- (C) Energy dissipated from earth system exceeds incoming energy
- (D) Incoming and outgoing energy from the earth system is same

Q076: Which city has the largest waste dump in India in terms of area?

- (A) Chennai
- (B) Delhi
- (C) Mumbai
- (D) Kolkatta

Q077: Poor operation in \_\_\_\_\_ unit leads to mud ball formation.

- (A) Rapid sand filter      (B) Anaerobic filter      (C) Trickling filter      (D) Pressure filter

Q078: As per the biomedical waste handling rules 2016, installation of in-house incinerator is allowed with permission from the State Pollution Control Board only when:

- (A) The users of the biomedical facility are in large number  
(B) The available biomedical facility is not working  
(C) There is no common biomedical facility nearby  
(D) The biomedical waste generation is high

Q079: Purpose of air pollution control equipment in an incineration plant is to control:

- (A) CO, SO<sub>x</sub>, PM      (B) CO, SO<sub>x</sub>, RSPM      (C) NO<sub>x</sub>, SO<sub>x</sub>, CO      (D) NO<sub>x</sub>, SO<sub>x</sub>, PM

Q080: 'Kalibangan' an Indus valley civilization site is located in which district of Rajasthan?

- (A) Hanumangarh      (B) Jaisalmer      (C) Jaipur      (D) Bikaner

Q081: Which of the following are contradictory plumes?

- (A) Neutral and lofting      (B) Fumigating and trapping  
(C) Looping and coning      (D) Lofting and fumigating

Q082: With reference to gas generation at a municipal solid waste landfill, concentration of \_\_\_\_\_ shall **not** exceed \_\_\_\_\_ of the lower explosive limit.

- (A) Carbon monoxide gas, 25%      (B) Methane gas, 66.6%  
(C) Carbon monoxide and methane, 66.6%      (D) Methane gas, 25%

Q083: Who is considered as the Kuldevi of Yaduvanshi dynasty of Karauli?

- (A) Karni Mata      (B) Sheetla Mata      (C) Living mother      (D) Kaila Devi

Q084: Expert Appraisal Committee (EAC) and State Expert Appraisal Committee (SEAC) are constituted by MoEF&CC for recommending the issuance of EC for projects. Which category of projects are considered by EAC for recommending issue of EC?

- (A) B1      (B) B2      (C) A      (D) A1

Q085: In an activated sludge process based wastewater treatment plant stiff white billowing foam is observed on the aeration tank surface. What does the presence of such foam indicate?

- (A) Hydraulic retention is high      (B) Very high oxygen content  
(C) F/M ratio is very low      (D) Mean cell residence time is less

Q086: BOD concentration of sewage for any given city will **not** be dependent on which of the following parameters?

- (A) Population of the city      (B) Water consumption per capita  
(C) Organics released per capita  
(D) Commercial /Institutional water consumption in the city

Q087: Who was the first person from Rajasthan to receive the Padma Vibhushan Award?

- (A) Ghanshyam Das Birla      (B) JRD Tata  
(C) Daulat Singh Kothari      (D) Rajesh Pilot

Q088: If MACHINE is coded as 19-7-9-14-15-20-11, what will be the code of DANGER?

- (A) 11-7-20-16-11-24      (B) 13-7-20-9-11-25  
(C) 13-7-20-10-11-25      (D) 10-7-20-13-11-24

Q089: When wastewater is discharged in a stream / river, the organic matter starts decomposing and oxygen present in water is consumed by bacteria, causing a DO-deficit ( $D = D_{\text{sat}} - D_t$ ) in river water. The DO-deficit is known to follow first order reaction kinetics. Which one out of the following correctly represents this reaction kinetics, if  $t$  is time,  $D_0$  is DO-deficit at time  $t = 0$ ,  $D_t$  is DO-deficit at time  $t$  and  $k$  is reaeration rate?

- (A)  $D_t = D_0 * \exp(-k*t)$  (B)  $D_t = D_0 * \exp(2*(k*t))$   
(C)  $D_t = D_0 * 2*\exp(k*t)$  (D)  $D_t = D_0 * \exp(k*t)$

Q090: According to Gaussian Plume Model, the downwind ground level concentration (C) varies with effective stack height (H) of release as:

- (A)  $\ln(C) \propto H^{-3/2}$  (B)  $\ln(C) \propto H^{-1/2}$  (C)  $\ln(C) \propto H^{-1}$  (D)  $\ln(C) \propto H^{-2}$

Q091: Which of the following has the highest albedo?

- (A) Water surface (B) Vegetation (C) Fresh snow (D) Plateau surfaces

Q092: Which of the following is **not** a basic unit of 'SI System of Units'?

- (A) Second (B) Meter (C) Mole (D) Gram

Q093: Who was the first woman to win the Nobel Prize?

- (A) Maria Goeppert Mayer (B) Marie Curie  
(C) Emmanuelle Charpentier (D) Irène Joliot-Curie

Q094: Underflow sludge from clarifier has solids concentration of 2% and volumetric flow rate of 1000 m<sup>3</sup>/day, what will be the dry solids flow rate in kg/day?

- (A) 20000 (B) 50 (C) 10000 (D) 500

Q095: To save on transportation time, the fuel transfer stations should be set up in large cities where disposal sites are more than:

- (A) 5 km away (B) 15 km away (C) 20 km away (D) 10 km away

Q096: Government has issued advisory for import and possession of exotic live species under which agreement?

- (A) CITES (B) CMS (C) UNFCCC (D) CBD

Q097: As per Bio-medical Waste Management Rules, 2016, which method of disposal is permitted only in rural or remote areas where there is no access to common bio-medical waste treatment facility?

- (A) Incineration (B) Deep burial (C) Disinfection (D) Autoclaving

Q098: Which one of the following is **not** a permissible application of materials made from construction and demolition waste?

- (A) Drainage layer in leachate collection system at the bottom of sanitary landfill  
(B) Drainage Layer in top cover system above gas collection layer of sanitary landfill  
(C) Daily cover sanitary landfill  
(D) Liner system in a sanitary landfill

Q099: A rectangular channel (width =  $w$  and depth =  $d$ ) connects the cascade aerator and flash mixer in a conventional water treatment plant. Being open channel, flow is calculated using the Manning's formula, i.e.,  $V = (1/n) * (R^{2/3} S^{1/2})$ . How is  $R$  calculated?

- (A)  $R = (b+2d) / (b*d)$  (B)  $R = (b*d) / (b+2d)$   
(C)  $R = 2(b*d) / (b+d)$  (D)  $R = (b*d) / (2b+d)$

Q100: Pugal is a breed of what in Rajasthan?

- (A) Sheep (B) Camel (C) Cow (D) Goat

Q101: A city has the following characteristics: Width=5 km, Length (along the wind direction) = 10 km,  $u$  (wind speed) = 2.5 m/s,  $H$  (atmospheric mixing height) = 1000 m, the upwind, or background, concentration of nitrous oxide is  $b = 10 \mu\text{g}/\text{m}^3$ . The emission rate per unit area is  $q = 4 \times 10^{-6} \text{ g}/\text{s} \cdot \text{m}^2$ . What is the steady-state concentration of nitrous oxide, in  $\mu\text{g}/\text{m}^3$ , over the city (assume there is no chemical reaction)?  
(A) 16 (B) 20 (C) 30 (D) 26

Q102: Proximate Analysis of Waste will give information about  
(A) BOD, COD, pH and Temperature  
(B) Calorific value, C:N ratio, Field Capacity and Metal Content  
(C) Molecular composition (C, H, N, O, P, etc.)  
(D) Moisture content, Volatile Combustible Matter, Fixed Carbon and Ash Content

Q103: The pyrolysis process is highly endothermic and it is also known as \_\_\_\_\_ distillation  
(A) Fractional (B) Steam (C) Vacuum (D) Destructive

Q104: Mixing requirement in the aeration tank should be in the range of \_\_\_\_\_  $\text{W}/\text{m}^3$  of the tank volume  
(A) 50 – 60 (B) 5 – 10 (C) 15 – 26 (D) 100 – 120

Q105: What will be the range of AQI for purple colour representing poor category  
(A) 151 – 200 (B) 0 – 50 (C) 301 and Above (D) 201 - 300

Q106: It is desirable to know the frequency of sound along with its decibel level because  
(A) Frequency alone decides the annoyance level  
(B) Decibel level depends on frequency of sound  
(C) Sound pressure and frequency are important for sonic boom  
(D) Perceptible noise to human ear relates to both frequency and sound pressure

Q107: Which out of the following is an exclusively suspended growth system/process?  
(A) Sequential batch reactors (B) Trickling filters  
(C) Moving bed biological reactors (D) Rotating biological contactors

Q108: Which one is **not** an international agreement/protocol related to environmental protection?  
(A) London Declaration (B) Montreal Protocol  
(C) Kyoto Protocol (D) Paris Agreement

Q109: Ozone is a secondary pollutant because  
(A) It has three atoms of oxygen (B) It is formed in the troposphere  
(C) The origin of ozone is from stratosphere (D) It is highly toxic

Q110: The Ministry of Environment, Forest and Climate Change (MoEF&CC) has published the draft Environment Impact Assessment (EIA) Notification 2020, with the intention of replacing the existing EIA Notification, 2006 under the Environment (Protection) Act, 1986. Which of the following is/are the key change(s) from existing regulation?

- I. Removal of several activities from the purview of public consultation.
- II. A list of projects has been included under Category B2, expressly exempted from the requirement of an EIA.

(A) I and II both (B) Neither I nor II (C) Only II (D) Only I

Q111: With reference to Membrane bioreactor which one of the following statements is true?  
(A) MLSS in the aeration tank is much lower than ASP  
(B) MLSS in the aeration tank is much higher than ASP  
(C) MLSS in the aeration tank is equal to ASP  
(D) No requirement of MLSS

- Q112: The color of a star indicates its  
 (A) Temperature (B) Mass (C) Distance (D) Luminosity
- Q113: The National Green tribunal (NGT) hears matters relating to  
 (A) Water, climate change, forests (B) Biodiversity, climate change, forests  
 (C) Biodiversity, forests, water (D) Biodiversity, climate change, water, forests
- Q114: What is the order of waste management hierarchy, from **least to most** favored?  
 (A) Recycle-Prevention-Disposal-Reuse (B) Prevention-Recycle-Reuse-Disposal  
 (C) Disposal-Recycle-Reuse-Prevention (D) Reuse-Disposal-Prevention-Recycle
- Q115: In HEP (Habitat Evaluation Procedure) the HSI (Habitat Suitability Index) will be equal to  
 (A)  $HSI = (\text{Optimum habitat condition})/1000$   
 (B)  $HSI = (\text{Study area habitat condition})/1000$   
 (C)  $HSI = (\text{Study area habitat condition})/(\text{Optimum habitat condition})$   
 (D)  $HSI = \text{Study area habitat condition} \times \text{Optimum habitat condition}$
- Q116: In addition to temperature difference in stack gases and ambient environment, what are the other two factors which affect the plume rise?  
 (A) Horizontal wind speed and stack exit velocity  
 (B) Cross wind speed and adjacent height of the building  
 (C) Horizontal wind speed and frictional velocity  
 (D) Cross wind velocity and frictional velocity
- Q117: Jaswant animal fair is conducted in which district of Rajasthan?  
 (A) Jaisalmer (B) Karoli (C) Bharatpur (D) Kota
- Q118: What does PAH stand for in terms of environmental chemistry?  
 (A) Polynuclear Aromatic Hydrides (B) Polycyclic Aromatic Hydrocarbons  
 (C) Polycyclic Acetic Hydrocarbons (D) Polyethylene Acetic Hydride
- Q119: Loktak Lake, one of the largest freshwater lakes in North East India and famous for floating Keibul Lamjao National Park, is located in  
 (A) Assam (B) Manipur (C) Nagaland (D) Arunachal Pradesh
- Q120: Geo-net is a \_\_\_\_\_ material used for drainage of \_\_\_\_\_  
 (A) Ceramic, Liquids (B) Synthetic, Gases (C) Synthetic, Liquids (D) Fibrous, Liquids
- Q121: Which country launched 'Vulture Action Plan 2020-25', to actively increase the number of vultures?  
 (A) China (B) Australia (C) Brazil (D) India
- Q122: Which organization has accepted the Indian Regional Navigation Satellite System (IRNSS) to be used for navigation in the Indian Ocean Region?  
 (A) International Telecommunication Union (B) International Maritime Organization  
 (C) World Tourism Organisation (D) United Nations
- Q123: Grain bowl of Rajasthan state is:  
 (A) Sriganganagar (B) Jhalawar (C) Hanumangargh (D) Kota
- Q124: Hawa Mahal of Jaipur was designed by  
 (A) Bhagat Jain (B) Lal Chand Ustad  
 (C) Vidyadhar Bhattacharya (D) Sawai Jai Singh
- Q125: Particle diameter of Tobacco smoke ranges between  
 (A) 1.0 - 100.0  $\mu\text{m}$  (B) 0.0001 - 10.0  $\mu\text{m}$  (C) 0.01 - 1.0  $\mu\text{m}$  (D) 10.0 - 100.0  $\mu\text{m}$

Q126: United Nations conference on the Human Environment was held at Stockholm in which of the following years?

- (A) 1974 (B) 1981 (C) 2004 (D) 1972

Q127: What component of MSW is significantly higher in US and UK in comparison to India?

- (A) Paper (B) Biodegradables (C) Yard waste (D) Inerts

Q128: Green crackers have been introduced as a replacement of normal crackers. Which of the following is **not** true about these?

- (A) These have less emissions (B) They are less harmful than conventional  
(C) These emit lot of green fumes (D) They are marked with logo of NEERI

Q129: Sundarban Biosphere is located in

- (A) Rajasthan (B) Maharashtra (C) West Bengal (D) Jammu and Kashmir

Q130: Which of the following bacterial genera causes problem of foaming in activated sludge process?

- (A) *Nitrosomonas* (B) *Nocardia* (C) *Nitrobacter* (D) *Nitrospira*

Q131: BrahMos Aerospace is a joint venture company set up by Russia's Mashinostroyeniya and which other company of India?

- (A) DRDO (B) ISRO (C) BHEL (D) HAL

Q132: In the habitat based methods for Biological Impact Assessment considering HUVs (Habitat Unit Values) the impact is equal to (Here  $HUV_{wp}$  = with project HUV and  $HUV_{wop}$  = without project HUV)

- (A)  $HUV_{wp} / HUV_{wop}$  (B)  $HUV_{wp} + HUV_{wop}$   
(C)  $HUV_{wp} * HUV_{wop}$  (D)  $HUV_{wp} - HUV_{wop}$

Q133: Which word has become "Word of the Year 2020" in the Cambridge Dictionary?

- (A) Corona (B) Covid (C) Lockdown (D) Quarantine

Q134: In trickling filters, the wastewater is distributed over media upon which biological film growth develops containing living organisms that \_\_\_\_

- (A) filters water (B) generates organic material  
(C) helps in oxidation of the organic material (D) allows water to flow

Q135: The stability of the stratosphere is due to which of the following reasons?

- (A) Pressure is minimal (B) Weak wind currents  
(C) Strong wind currents (D) Absorption of solar energy by ozone layer

Q136: Under the current EIA notification, which category of projects would **not** require conducting an EIA study?

- (A) B2 (B) A (C) B1 (D) A2

Q137: Which of the following statement(s) is/are correct?

- I. The name "coronavirus" comes from the crown-like projections on the virus's surfaces. "Corona" in Latin means "halo" or "crown."
- II. The new coronavirus, SARS-CoV-1, causes COVID-19.
- III. WHO announced COVID-19 outbreak as a pandemic on 11 February 2020
- IV. WHO has declared year 2020 as the Year of the Nurse and the Midwife

- (A) All I, II, III and IV (B) Only II, III and IV  
(C) Only I and IV (D) Only II and III

Q138: Some of the oxygen demand parameters for an organic compound / wastewater are Theoretical (ThOD), Chemical (COD), Ultimate BOD (UBOD). If an organic compound is assumed to be completely biodegradable, which of the following is true?

- (A) ThOD > UBOD > COD (B) COD = ThOD = UBOD  
(C) COD > ThOD = UBOD (D) COD = UBOD < ThOD

Q139: Thickening of sludge occurs by type \_\_\_\_ settling

- (A) IV (B) I (C) II (D) III

Q140: Validity of Environmental clearance for mining projects remains for maximum of \_\_\_\_ year(s).

- (A) 5 (B) 30 (C) 1 (D) 10

Q141: In design of an ASP based treatment system, two important design parameters are food to microorganism (F/M) ratio and mean cell residence time (MCRT). Which of the following are used for the computation of the F/M ratio?

- (A) MLSS and Biological Oxygen Demand of wastewater  
(B) Aeration tank volume and mixed liquor suspended solids  
(C) Biochemical Oxygen Demand (BOD) of wastewater and Flow of wastewater  
(D) BOD of wastewater and mixed liquor volatile suspended solids

Q142: An upflow anaerobic sludge blanket reactor, with 6 hours hydraulic detention time, is designed to treat 5MLD of wastewater with COD of 400 mg/L. What will be the volumetric organic loading rate (kg COD/m<sup>3</sup>d)?

- (A) 1.6 (B) 1.2 (C) 1.25 (D) 3.3

Q143: Which of the following gases varies significantly over time and place at the atmospheric boundary level?

- (A) Oxygen (B) Ozone (C) Water vapour (D) Carbon dioxide

Q144: The mean and standard deviation of a data-set of an air quality parameter are 10 and 1, respectively. On adding 2 to each data value, the mean and standard deviation will be, respectively:

- (A) 12, 6 (B) 10, 1 (C) 10, 6 (D) 12, 1

Q145: Which of the following is **incorrect** regarding the fabric filters?

- (A) They have low efficiency in comparison to Electrostatic precipitator for ultra fine particles  
(B) They can handle large volume of gas at relatively high speed  
(C) They can remove very small particle  
(D) They are liable to chemical attack

Q146: A \_\_\_\_ calorimeter is a type of \_\_\_\_ calorimeter used in measuring the heat of combustion of a particular reaction.

- (A) Joule-Thomson, constant-temperature (B) Bomb, constant-volume  
(C) Joule-Thomson, constant-volume (D) Bomb, constant-temperature

Q147: In which city of Rajasthan, the observatory of the Indian Weather Department is located?

- (A) Jaipur (B) Bikaner (C) Jodhpur (D) Kota

Q148: The size of a wooden block is 5 cm x 10 cm x 20 cm. How many whole such blocks you will take to construct a solid wooden cube of minimum size?

- (A) 16 (B) 12 (C) 8 (D) 6

Q149: In which country, a 500-meter-high coral reef has been discovered for the first time in 120 years?

- (A) Brazil (B) India (C) Australia (D) Japan

Q150: Which solar project of Rajasthan in 2020 was recognized as the largest cluster of photovoltaic power plants in a single region in the world, with the installed power exceeding the 2.2 GW?

- (A) Bhadla Solar Park (B) Pavagada Solar Park  
(C) Charanka Solar Park (D) Kurnool Ultra Mega Solar Park