

Paper I - SECTION A
(General Ability)

Part I: Multiple Choice Questions

[50x2=100]

- 1) Population interacts with several other factors to determine a society's environmental impact. One widely-cited formula is the "I = PAT" equation, proposed by Paul R. Ehrlich and John P. Holdren in 1974. Here I-P A T stand for
 - A) Impact; Population; Affluence and Technology
 - B) Indian; Population; Affordability and Technology
 - C) Impact; Private; Affluence and Training
 - D) None of the above

- 2) Biotic components are the living things that shape an ecosystem, they include.....
 - i) Autotrophs
 - ii) Heterotrophs
 - iii) Detritivores
 - A) All the three
 - B) Only I & II
 - C) Only III
 - D) Only II & III

- 3) Which of the following statement is correct?
 - i) Statement 1: Adulteration takes place more in loosely sold items than those sold packed.
 - ii) Statement 2: Powder and paste forms are more adulterated than solid lumps.
 - A) Only 1 is correct
 - B) Both are correct
 - C) Both are not correct
 - D) Only 2 is correct

- 4) Benefits of Implementing HACCP/ ISO 22000:
 - A) A preventive approach to food safety
 - B) Reduce the need for and cost of end product testing
 - C) Can help identify process improvements and reduce customer complaints
 - D) All of above

- 5) The most heat resistant, anaerobic, spore forming pathogen that can grow in low acid canned foods is
- A) *Bacillus subtilis*
 - B) *Clostridium botulinum*
 - C) *Clostridium sporogenes*
 - D) *Bacillus stearothermophilus*
- 6) Cider beverage is prepared from?
- A) Guava
 - B) Apple
 - C) Honey
 - D) Molasses
- 7) In preservation and processing of fruits and vegetables sulphur-di-oxide is used because
- A) It acts as an antioxidant
 - B) It is used to preserve its colour
 - C) It is used for dried fruits owing to its antimicrobial properties
 - D) All of the above
- 8) Which of the following statement is correct:
- i) Statement 1: Cost reduction trend of the food industry often leads manufacturers to forget the health aspect of the food, although health itself is another important trend of the food industry.
 - ii) Statement 2: Food processing industries now-a-days is also looking into energy efficiency methods to process food. Hence, it's an upcoming trend.
- A) only 1 is correct
 - B) only 2 is correct
 - C) both are incorrect
 - D) both are correct
- 9) In food preservation techniques excess UV-C causes DNA damage, which of the following methods can be used to apply this technique itself in spite of this drawback?
- A) Reduce the exposure time to this process by combining two or more methods
 - B) There is no solution
 - C) All of the mentioned
 - D) None of the mentioned

- 10) What difference will urbanisation make for hunger and malnutrition?
- A) No significant difference;
 - B) It will reduce poverty and hunger because these are almost entirely concentrated in rural areas.
 - C) Urban dwellers depend more than rural people on purchases to acquire food, have little opportunity to grow their own food, and so are much more vulnerable to food price increases.
 - D) Poor city folk eat mainly sorghum, millet, maize and root crops, so a lot more of those foods will need to be produced as the world urbanises.
- 11) "Culture is the man-made part of environment." Who said so?
- A) E. B. Tylor
 - B) M.J. Herskovits
 - C) R. Brown
 - D) K. Davis
- 12) The concept 'consciousness of kind' is a significant contribution of _____.
- A) Sumner
 - B) Parsons
 - C) Giddings
 - D) Berger
- 13) Which among the following is an informal method of social control?
- A) Customs
 - B) Coercion
 - C) Law
 - D) Education
- 14) Rabindra Nath Tagore's Jana Gana Mana has been adopted as National Anthem of India. How many stanzas of the original song have been adopted for the anthem?
- A) Only the first stanza
 - B) The whole song.
 - C) First and Second Stanza
 - D) First and last stanza

- 15) _____ suicide is a product of relatively weak group integration
- A) Egoistic
 - B) Altruistic
 - C) Anomic
 - D) Fatalistic
- 16) Name one American sociologist, who is known as the founder of behavioural sociology and exchange theory.
- A) T. Parsons
 - B) B. F. Skinner
 - C) H. Blumer
 - D) G. C. Homans
- 17) Which of the following is not a Millennium Development Goal?
- A) Improve maternal health
 - B) Universal access to safe drinking water, sanitation and hygiene.
 - C) Ensure environmental sustainability
 - D) Achieve Universal Primary education
- 18) The Global Multidimensional Poverty Index (MPI) identifies multiple deprivations at the household and individual level in health, education and standard of living to measure:
- A) Acute poverty
 - B) Extreme poverty
 - C) Standard of Living
 - D) Increase in Government Jobs
- 19) The indicators to calculate Gender Inequality Index include :
- A) Maternal Mortality Ratio
 - B) Female and Male shares of parliamentary seats
 - C) Female and Male Labour Force Participation rates
 - D) All of the above
- 20) Which one of the following is not an ideal solution for tackling water shortages?
- A) Controlling population growth
 - B) Conserving water in irrigation
 - C) Controlling water pollution
 - D) Drilling large number of deep bore wells

- 21) The teeth are likely to be pitted, more susceptible to cavities and wear, when the fluoride concentration is:
- A) More than 2 mg/l
 - B) More than 40 mg/l
 - C) More than 20 mg/l
 - D) More than 4 mg/l
- 22) Which of the following is not a viable protection against deforestation?
- A) Reduce the consumption of forest and related products
 - B) Boycott products of companies involve in deforestation
 - C) Privatization of forest land
 - D) Environmental education
- 23) The problems for criticism about large dams are that they.....
- A) Displace large number of peasants and tribals without proper rehabilitation
 - B) Swallow up huge amounts of public money without the generation of proportionate benefits
 - C) Contribute enormously to deforestation and the loss of biological diversity
 - D) All of the above.
- 24) Water harvesting is an age-old concept in India. Various methods are used in different regions of India. *Khadins* water harvesting method is used in
- A) Rajasthan
 - B) Maharashtra
 - C) Bihar
 - D) Uttar Pradesh
- 25) The concept of sustainable development encourages
- A) Form of growth that meets current basic needs
 - B) Preservation of the resources for the need of future generation
 - C) A change in all respects of life
 - D) Growth to meet current needs, preservation for the needs of future and change in all respects of life
- 26) Study of trends in human population growth and prediction of future growth is called
- A) Demography
 - B) Biography
 - C) Kalography
 - D) Psychology

27) Increasing skin cancer and high mutation rate are the result of:

- A) Ozone depletion
- B) Acid rain
- C) CO pollution
- D) None of the above

28) Which important greenhouse gas other than methane is being provided from the agricultural fields?

- A) CO
- B) Nitrous oxide
- C) Ammonia
- D) SO

29) Regional disparity in per capita income in India has increased in the post-reform period due to many factors. Which among the following factors has not contributed to the growth in such disparity?

- A) Decline in the share of public investment
- B) Change in policy regime regulating investment location
- C) Poor governance and poor infrastructure
- D) Allocation of funds by the central government

30) Division of labour often involves

- i) Specialized economic activity
- ii) Highly distinct productive roles
- iii) Employment roles for every individual
- iv) Individuals engage in only a single activity and are dependent on others to meet their various needs

Select the correct answer using the codes given below:

- A) 1, 3 and 4 only
- B) 1, 2, and 4 only
- C) 1 and 3 only
- D) 2 and 4 only

31) An organic crop is one that is grown on land that has been free from prohibited pesticides, herbicides, and synthetic fertilizers for years preceding growth to be eligible for Organic Certificate.

- A) One
- B) Two
- C) Three
- D) Four

32) The value of national income adjusted for inflation is called

- A) Per capita income
- B) Disposable income
- C) Inflation rate
- D) Real national income

33) The author of the book An Essay on Principles of Population is

- A) Malthus
- B) James Princep
- C) Keynes
- D) Frank Notenstein

34) What causes Tsunami?

- A) Sudden vertical movement of the Earth
- B) Convergence of destructive plates in the ocean floor
- C) Explosive volcanic eruptions in the seas/oceans.
- D) All of the above

35) Which of the following statement are related to the remedial steps required to reduce the risk of life and property by landslides.

- i) Mapping of landslide prone areas.
- ii) Construction of houses, felling of trees and grazing in landslide prone areas should be prohibited or restricted.
- iii) Afforestation in the vulnerable areas is an effective way of durable landslides control.

Code:

- A) Only I
- B) Only III
- C) Both I & II
- D) All of the above

36) The theory that says the level of population at which per capita income is maximum is

- A) Theory of population by Malthus
- B) Theory of optimum population
- C) Theory of demographic transition
- D) None of the below

- 37) What reflects a country's transactions (by individuals, firms and government bodies.) with the rest of the world?
- A) Trade deficit
 - B) Capital Budget
 - C) Foreign imports
 - D) Balance of Payments or BoP
- 38) What does ISDR stand for?
- A) International Significant Disaster Resources
 - B) International Strategy for Disaster Reduction
 - C) International Sustainable Development Resources
 - D) Intergovernmental Strategy for Strategy Development
- 39) When do we say that food is adulterated under the PFA Act?
- A) If it is obtained from a diseased animal
 - B) If spices are sold without their essence
 - C) If any ingredient is injurious to health
 - D) All of the above
- 40) ISO 19011:2011 Quality Management System deals with
- A) Specifications with Guidance for use
 - B) Guidelines for performance improvements
 - C) Customer Satisfaction
 - D) Guidelines for quality and or Environmental management system auditing.
- 41) Delimitation Commissions was not constituted in which of the following year?
- A) 1952
 - B) 2018
 - C) 1963
 - D) 2002
- 42) Which one of the types of deficit is not mentioned in budget statement directly?
- A) Monetised Deficit
 - B) Revenue Deficit
 - C) Fiscal Deficit
 - D) Primary Deficit

- 43) In nitrogen cycle soil nitrates are transferred into free nitrogen by
- A) Nitrifying bacteria
 - B) Denitrifying bacteria
 - C) Amonifying bacteria
 - D) Both A & B
- 44) The use of Microorganism Metabolism to remove pollutants is known as
- A) Bio Magnification
 - B) Bio Mithination
 - C) Bio Reduction
 - D) Bio Remediation
- 45) On 23 December 2005, the Government of India enacted the Disaster Management Act, which envisaged the creation of the National Disaster Management Authority. Who among the following heads this authority?
- A) Home Minister of India
 - B) Prime Minister of India
 - C) Defence Minister of India
 - D) President of India
- 46) The annual "Royal Kathina Ceremony" is associated with which of the following religions?
- A) Jainism
 - B) Buddhim
 - C) Parsi
 - D) Sikhism
- 47) Which of the following is least infectious?
- A) Leprosy
 - B) Hepatitis
 - C) Tuberculosis
 - D) Conjunctivitis
- 48) The new Cabinet Minister of Health & Family Welfare Department of Union Government is
- A) Shri Ashwin Kumar Choubey
 - B) Dr Harsh Vardhan
 - C) Dr Subrahmanyam Jaishankar
 - D) Dr Mahendra Nath Pandey

49) The Ayushman Bharat scheme will subsume which among the following central schemes?

- i) Rashtriya Swasthya Bima Yojana (RSBY)
- ii) Central Government Health Scheme (CGHS)
- iii) Senior Citizen Health Insurance Scheme (SCHIS)

- A) Only i
- B) Only ii
- C) Both i & iii
- D) Both i & ii

50) Name the enzyme discovered by Centre for Cell & Molecular Biology (CCMB) scientist which helps to cut bacterial cell walls

- A) Xanthine Dehydrogenase
- B) Ribonucleotide Reductase
- C) Firefly Luciferase EC
- D) Murein Endopeptidase

Part II: Write short notes on ANY FIVE of the following

[5x4=20]

1. What do you understand by the term Material Culture?
2. Define Ethnocentrism?
3. What does the Human Development Index tell us?
4. How does one achieve Sustainable Development Goals?
5. Describe the role of economics in the health and medical care industry?
6. What is the main reason for excess exploitation of natural resources?
7. What are the top five environmental concerns facing the world today?
8. What is the link between health and Human rights?
9. Give any four harmful impact of consuming packaged food on human health?
10. Organic food and farmers market are things for a flourishing economy: Comment

11. What are the social and economic implications of population redistribution through rural to urban or international migration?
12. What are the advantages and disadvantages of organic production systems in terms of biodiversity, ecosystem services, yield and human health, particularly in resource-poor developing countries?
13. Regional cooperation is important in case of Disaster Management. Comment. Also enumerate upon the role of IT sector in disaster management.
14. How does science and technological changes and development effect our lives?
What are the positive and negative impacts of rapid growth in technology on human health?

Paper I - SECTION B
(Preventive Social & Community Medicine)

Part I: Multiple Choice Questions

[50x2=100]

- 1) The inability to carry out certain function or activity which is otherwise expected for that age sex is known as
 - A) Disease
 - B) Impairment
 - C) Disability
 - D) Handicap

- 2) Screening for breast cancer using mammography is
 - A) Primordial prevention
 - B) Primary prevention
 - C) Secondary prevention
 - D) Tertiary Prevention

- 3) The father of modern epidemiological surveillance is
 - A) William Farr
 - B) James Lind
 - C) Edwin Chadwick
 - D) Pettenkofer

- 4) National Vector Borne Disease Control Programme converges all of the following diseases EXCEPT
 - A) Chikungunya
 - B) Kala Azar
 - C) Plague
 - D) Japanese Encephalitis

- 5) The sex ratio is described as
 - A) Females for every 1000 males
 - B) Males for 1000 females
 - C) Fraction of females divided by males
 - D) Fraction of males divided by females

- 6) Which of the following is not a method of control of confounding during planning stage
 - A) Stratified analysis
 - B) Restriction
 - C) Pair Matching
 - D) Frequency Matching

- 7) Attrition is a problem with
- A) Case control study
 - B) Cross - sectional study
 - C) Cohort study
 - D) All of above
- 8) If Relative Risk is 1, it indicates that
- A) There is no cause effect relationship
 - B) There is Alpha Error
 - C) There is Beta error
 - D) None of the above
- 9) The fact that most people infected with Mycobacterium tuberculosis do not suffer from Tuberculosis indicate that
- A) Mycobacterium tuberculosis is not a necessary cause for tuberculosis
 - B) Mycobacterium tuberculosis is a necessary but not sufficient cause for Tuberculosis
 - C) Mycobacterium tuberculosis may be of atypical form
 - D) None of above
- 10) If a screening test is used in series twice, which parameter will increase?
- A) Sensitivity
 - B) Positive predictive value
 - C) Specificity
 - D) None of the above
- 11) Self-administration of drug for non-medical reason in frequency and quantities that may impair an individual's ability to function effectively and may result in physical, social and emotional harm, is best defined as
- A) Drug Abuse
 - B) Drug Dependence
 - C) Drug Tolerance
 - D) Hang-over Effect
- 12) Health workers going into the community in search of cases is an example of
- A) Sentinel surveillance
 - B) Passive surveillance
 - C) Mass surveillance
 - D) Active surveillance

- 13) The very first step in investigation of an epidemic is
- A) Confirmation of existence of an epidemic
 - B) Verification of diagnosis
 - C) Develop epidemiological case sheet
 - D) Formulation of hypothesis
- 14) To compare the variability in two populations we use this measure.
- A) Range
 - B) Coefficient of Variation
 - C) Median
 - D) Standard deviation
- 15) Six volunteers have gone on a cholesterol lowering diet for six months. The pre-trial and the post-trial changes in the cholesterol levels are analyzed. The appropriate test of statistical significance for this trial is
- A) The critical ratio
 - B) Odds ratio
 - C) Paired t-test
 - D) Chi-square test
- 16) The scatter plot is used to display
- A) Causality
 - B) Correlation
 - C) Power
 - D) Type II error
- 17) The most common form of financing health care in India is
- A) Provider Payment
 - B) General Tax Revenue
 - C) Out of Pocket Payment
 - D) External Finance
- 18) One PHC should be present in hilly areas for every
- A) 10,000 population
 - B) 20,000 population
 - C) 30,000 population
 - D) 50,000 population

- 19) Which committee recommended 'No private practice' for government doctor
- A) Mudaliar committee
 - B) Chadah committee
 - C) Kartar Singh committee
 - D) Jungalwalla committee
- 20) All of the following diseases are eliminated in India EXCEPT
- A) Leprosy
 - B) Yaws
 - C) Dracunculiasis
 - D) Measles
- 21) Which of the following Anti tubercular drug is bacteriostatic?
- A) Streptomycin
 - B) Ethambutol
 - C) Isoniazid
 - D) Rifampicin
- 22) Centchroman (non steroidal contraceptive) has been developed by
- A) Indian Institute of Population Sciences
 - B) National Institute of Health and Family Welfare
 - C) All India Institute of Medical Sciences
 - D) Central Drug Research Laboratory, Lucknow
- 23) Which one of the following is not a target disease under 'Vision 2020: The Right to Sight'
- A) Refractive error
 - B) Trachoma
 - C) Childhood blindness
 - D) Diabetic retinopathy
- 24) The method which is generally more effective among the following in changing human behaviour is
- A) Counseling
 - B) Focus group discussion
 - C) Mass media
 - D) A series of lectures

25) Globe thermometer is used to measure

- A) Air Temperature
- B) Cooling Power of Air
- C) Relative Humidity
- D) Mean Radiant Temperature

26) Which of the following is a Non-Freezing Cold Injury (NFCI)

- A) Frost bite
- B) Trench Foot
- C) Hypothermia
- D) Frost nip

27) Which drug is recommended for Chemoprophylaxis three days before induction into high altitude areas

- A) Acetazolamide
- B) Furosemide
- C) Doxycycline
- D) Paracetamol

28) Which one of the following is not a waterborne disease

- A) Kala Azar
- B) Poliomyelitis
- C) Giardiasis
- D) Ascariasis

29) In normal doses, Chlorination does not affect

- A) Salmonella
- B) Poliovirus
- C) Shigella
- D) HIV

30) The main greenhouse gas which is largely contributing to Global warming is

- A) Carbon dioxide
- B) Methane
- C) Nitrous oxide
- D) Fluorocarbons

- 31) Which of the following is not a source of beta carotene
- A) Green vegetable
 - B) Sweet Potato
 - C) Liver
 - D) Papaya
- 32) Which of the following is not true regarding diet during lactation
- A) Energy requirement during lactation is higher than during pregnancy
 - B) Iron requirement during lactation is higher than during pregnancy
 - C) Vitamin C requirement during lactation is higher than during pregnancy
 - D) Vitamin A requirement during lactation is higher than during pregnancy
- 33) Haemoglobin cut-off level to label anaemia in a pregnant woman as per WHO guidelines is
- A) 10 gms%
 - B) 10.5 gms%
 - C) 11 gms%
 - D) 11.5 gms%
- 34) Community feeding of children is undertaken in all EXCEPT
- A) ICDS programme
 - B) Mid-day meal programme
 - C) Balwadi programme
 - D) School health programme
- 35) The denominator in IMR (Infant Mortality Rate) is
- A) Total number of live births
 - B) Total number of live and still births
 - C) Total number of still births
 - D) Total population
- 36) Which of the following is not true about dehydration
- A) Mild to moderate dehydration can be corrected at home by ORS
 - B) ORS Solution should be made fresh daily
 - C) Breast feeding should be delayed till dehydration is corrected
 - D) Patient should be given as much ORS as he wants

- 37) Pathological Jaundice in a neonate includes all EXCEPT
- A) Develops in less than 24 hours of birth
 - B) Develops after 7 days
 - C) Develops after 14 days
 - D) Yellow discolouration of palms and soles
- 38) WHO defines 'Adolescent' as
- A) 10-18 years of age
 - B) 10-19 years of age
 - C) 11-18 years of age
 - D) 11-19 years of age
- 39) What is a mini pill
- A) Pill containing lesser amount of estrogen and progesterone
 - B) Once a month pill
 - C) Progesterone only pill
 - D) Emergency pill
- 40) Aedes species cannot transmit
- A) Chikungunya
 - B) Dengue haemorrhagic fever
 - C) Japanese Encephalitis
 - D) Yellow fever
- 41) Rodents are capable of transmitting which of these diseases to man through vectors
- A) Murine typhus
 - B) Leptospirosis
 - C) Rat bite fever
 - D) All of these
- 42) Which of these should not be done in case of snake bite
- A) Victim should be made to lie down with affected limb lower than the heart
 - B) Give incision
 - C) Start artificial respiration
 - D) Start antivenom
- 43) Which mode of transmission is followed in transmission of microfilaria through culex mosquito
- A) Cyclo- propagative
 - B) Propagative
 - C) Cyclo- developmental
 - D) Vehicle – borne

- 44) Temperature of ILR (Ice-Lined Refrigerator) should be maintained at
- A) -15 to -25 °C
 - B) 15 to 25 °C
 - C) -2 to -8 °C
 - D) 2 to 8 °C
- 45) The possible pathogens in Acute Diarrhoeal Syndrome are all EXCEPT
- A) *Vibrio cholerae*
 - B) Rotavirus
 - C) *Leptospira*
 - D) *Cryptosporidium*
- 46) Most of the severe morbidity and mortality in malaria is caused by
- A) *Plasmodium vivax*
 - B) *Plasmodium malariae*
 - C) *Plasmodium falciparum*
 - D) *Plasmodium ovale*
- 47) Most commonly reported rickettsial infection in India is
- A) Scrub Typhus
 - B) Indian Tick Typhus
 - C) Epidemic Typhus
 - D) Rickettsial pox
- 48) Animal Reservoir of *Brucella suis* is
- A) Buffalo
 - B) Camels
 - C) Feral swine
 - D) Goats
- 49) Most common cause of death associated with measles is
- A) Measles encephalitis
 - B) Pneumonia
 - C) Subacute Sclerosing Panencephalitis
 - D) Severe diarrhoea
- 50) Mental Health Care Act was passed in the year
- A) 2015
 - B) 2016
 - C) 2017
 - D) 2018

Part II: Write short notes on ANY FIVE of the following

[5x4=20]

- 1) Potential errors in interpretation of indicators of morbidity
- 2) Principles or pillars of 'Primary Health Care'
- 3) Seasonal fluctuations in communicable diseases
- 4) Medical Audit
- 5) Health advice to travellers
- 6) Minimum health care service requirement at Primary Health Centre as per Indian Public Health Standards (IPHS)
- 7) Roles and responsibilities of ASHA (Accredited Social Health Activist)
- 8) HIV (Human Immunodeficiency Virus) testing policy in India
- 9) Generalized Hypothermia and its management at primary health care level
- 10) Dietary Fibres in Health and Disease

Part III: Attempt ANY TWO of the following

[2x15=30]

- 11) Elaborate on steps to be taken by Medical Officer while planning a screening programme for the defined community.
- 12) Describe IDSP (Integrated Disease Surveillance Project) under the headings of aim and objectives, structural framework, disease conditions under surveillance program and response to the surveillance information at various levels.
- 13) Discuss the health problems existing in people of Tribal areas and suggest measures for the same.
- 14) Explain IUCD (Intra-Uterine Contraceptive Devices) under headings- Types, Mechanism of action, Absolute contraindications, Timing of insertion, Instructions to be given to the lady after insertion and Complications