

Question Booklet No.

(To be filled up by the candidate by **blue/black ball-point pen**)

Roll No.

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Roll No. (Write the digits in words)

Serial No. of OMR Answer Sheet

Day and Date

(Signature of Invigilator)

INSTRUCTIONS TO CANDIDATES

(Use only **blue/black ball-point pen** in the space above and on both sides of the **Answer Sheet**)

1. Within 10 minutes of the issue of the Question Booklet, Please ensure that you have got the correct booklet and it contains all the pages in correct sequence and no page/question is missing. In case of faulty Question Booklet, bring it to the notice of the Superintendent/Invigilators immediately to obtain a fresh Question Booklet.
2. Do not bring any loose paper, written or blank, inside the Examination Hall *except the Admit Card without its envelope*.
3. *A separate Answer Sheet is given. It should not be folded or mutilated. A second Answer Sheet shall not be provided.*
4. Write your Roll Number and Serial Number of the Answer Sheet by pen in the space provided above.
5. *On the front page of the Answer Sheet, write by pen your Roll Number in the space provided at the top, and by darkening the circles at the bottom. Also, wherever applicable, write the Question Booklet Number and the Set Number in appropriate places.*
6. *No overwriting is allowed in the entries of Roll No., Question Booklet No. and Set No. (if any) on OMR sheet and Roll No. and OMR sheet No. on the Question Booklet.*
7. *Any changes in the aforesaid-entries is to be verified by the invigilator, otherwise it will be taken as unfair means.*
8. *This Booklet contains 40 multiple choice questions followed by 10 short answer questions. For each MCQ, you are to record the correct option on the Answer Sheet by darkening the appropriate circle in the corresponding row of the Answer Sheet, by pen as mentioned in the guidelines given on the first page of the Answer Sheet. For answering any five short Answer Questions use five Blank pages attached at the end of this Question Booklet.*
9. For each question, darken only one circle on the Answer Sheet. If you darken more than one circle or darken a circle partially, the answer will be treated as incorrect.
10. *Note that the answer once filled in ink cannot be changed. If you do not wish to attempt a question, leave all the circles in the corresponding row blank (such question will be awarded zero marks).*
11. For rough work, use the inner back page of the title cover and the blank page at the end of this Booklet.
12. Deposit *both OMR Answer Sheet and Question Booklet* at the end of the Test.
13. You are not permitted to leave the Examination Hall until the end of the Test.
14. If a candidate attempts to use any form of unfair means, he/she shall be liable to such punishment as the University may determine and impose on him/her.

Total No. of Printed Pages : 15

FOR ROUGH WORK

Integrated M. Phil. – Ph.D. Programme – 2015

No. of Questions : 50

Time : 2 Hours

Full Marks : 200

Note : (i) This Question Booklet contains 40 Multiple Choice Questions followed by 10 Short Answer Questions.

(ii) Attempt as many MCQs as you can. Each MCQ carries 3 (Three) marks. 1 (One) mark will be deducted for each incorrect answer. Zero mark will be awarded for each unattempted question. If more than one alternative answers of MCQs seem to be approximate to the correct answer, choose the closest one.

(iii) Answer only 5 Short Answer Questions. Each question carries 16 (Sixteen) marks and should be answered in 150-200 words. Blank 5 (Five) pages attached with this booklet shall only be used for the purpose. Answer each question on separate page, after writing Question No.

1. The ecological program "Man and the Biosphere" was launched by :

(1) UNICEF	(2) DST
(3) UNESCO	(4) Ministry of Earth Science
2. Intensive use of nitrate fertilizers cause :

(1) Methemoglobinemia	(2) Acidosis
(3) Pneumonia	(4) Itai-Itai disease
3. PCB stands for :

(1) Polychlorinated biphenyls	(2) Polychloro benzene
(3) Poly cyclic benzidine	(4) Poly chloro benzoquinone
4. Food contamination is generally caused due to :

(1) Dinotoxins	(2) Mycotoxins	(3) Phytotoxins	(4) Cyanotoxins
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5. Place where river water meets ocean is :

(1) Connect	(2) Estuary	(3) Joint	(4) Tributary
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6. Which of the following is *not* a bioplastic ?

(1) Polylactic acid	(2) Ecoflex	(3) Celluloid	(4) Polyethylene
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7. Algal boom results in :

(1) Global warming	(2) Salination
(3) Eutrophication	(4) Biomagnification
8. A high Biological Oxygen Demand (B.O.D) indicates that :

(1) Water is pure	(2) Absence of microbial action
(3) Low level of microbial pollution	(4) High level of microbial pollution
9. Growing agricultural crops between rows of plant tress is known as :

(1) Social forestry	(2) Jhum
(3) Taungya System	(4) Agroforestry
10. Which of these is a heterotroph ?

(1) Cyanobacteria	(2) <i>Selaginella lepidophylla</i>
(3) Lithops	(4) <i>Mus musculus</i>

11. As per the 68th Session of the United Nations General Assembly; the year 2015 is being celebrated as :
- (1) International Year of Forest (2) International Year of Soils
(3) International Year of Biodiversity (4) International Year of Mountains
12. The most abundant greenhouse gas in the Earth's atmosphere is :
- (1) Water vapour (2) Carbon dioxide
(3) Methane (4) Nitrous oxide
13. Which of the following statement is **false** in case of 'Active Satellite' ?
- (1) Needs natural source of energy
(2) Needs artificial source of energy
(3) Obtain measurements anytime
(4) **Require fairly large amount of energy**
14. Stratospheric ozone is formed most in which of the following region ?
- (1) Polar (2) Tropical (3) **Temperate** (4) Sub-polar
15. Bhopal gas tragedy was caused by the leak of :
- (1) Ethyl isocyanate (2) Potassium isothiocyanate
(3) Methyl isocyanate (4) Sodium isothiocyanate
16. Biological Diversity Act of India was enacted in the year :
- (1) 2000 (2) 1981 (3) 1986 (4) 2002
17. As per the 'State of Forest Report' prepared by the Forest Survey of India, the current total forest cover in India is :
- (1) 20.50% (2) 30.33% (3) 21.23% (4) 25.43%
18. Which of the following is an **Indian satellite used for remote sensing** ?
- (1) CARTOSAT (2) AQUA (3) AURA (4) MISR
19. The most significant component of **photochemical smog** is :
- (1) SO₂ (2) PAN (3) CO (4) NO

20. The current average CO₂ concentration in the Earth's atmosphere is :
 (1) 368 ppm (2) 388 ppm (3) 398 ppm (4) 418 ppm
21. Groundwater is extracted from :
 (1) Aquifer (2) Aquitard (3) Aquiclude (4) Aquifuge
22. The remediation process facilitated by the physical interaction between heavy metals and microbial surface is :
 (1) Biotransformation (2) Bioconversion
 (3) Biosorption (4) Biomining
23. Great Indian Bustard Sanctuary is at :
 (1) Haryana (2) Maharashtra (3) Uttar Pradesh (4) Assam
24. Which of the following substantiate the concepts that 'the growth of an organism is controlled by limiting resources rather than the total amount of resources available' ?
 (1) Law of conservation of matter (2) Third law of Thermodynamics
 (3) Hutchinson's theory of niche (4) Liebig's Law of minimum
25. Which of the following is *not* a bioplastic ?
 (1) Polylactic acid (2) Polycarpolactone
 (3) Polyvinyl chloride (4) Polyesteramide
26. The top most issue prioritized by UN for the '2030 Agenda for Sustainable Development' is :
 (1) Zero hunger (2) No poverty
 (3) Good health and well being (4) Quality education
27. The 'safe space for humanity' means :
 (1) The space between the planetary boundaries and social boundaries
 (2) The space above the planetary boundaries
 (3) The space within the social boundaries
 (4) The space above the social boundaries

35. Based on the energy content, the different types of coal can be ranked as :
- (1) Peat > Lignite > Bituminous > Anthracite
 - (2) Lignite > Peat > Anthracite > Bituminous
 - (3) Anthracite > Bituminous > Lignite > Peat
 - (4) Peat > Bituminous > Lignite > Anthracite
36. 'Basmati rice' is an example of :
- (1) Geological indicator
 - (2) Geographical indicator
 - (3) Biological indicator
 - (4) Ecological indicator
37. The domestication of plants and animals has started during :
- (1) Upper Palaeolithic revolution
 - (2) Middle Palaeolithic revolution
 - (3) Neolithic revolution
 - (4) Green revolution
38. Which of the following sequences represent the world top annual CO₂ emitters ?
- (1) China > USA > European Union > India
 - (2) India > European Union > USA > China
 - (3) China > India > USA > European Union
 - (4) China > India > European Union > USA
39. Nutrient cycling is a kind of :
- (1) Regulatory service of an ecosystem
 - (2) Cultural service of an ecosystem
 - (3) Supporting service of an ecosystem
 - (4) Provisioning service of an ecosystem
40. Which of the following is the most versatile type of renewable energy ?
- (1) Geothermal
 - (2) Bioenergy
 - (3) Wind
 - (4) Tidal

Attempt any five questions. Write answer in 150-200 words. Each question carries 16 marks. Answer each question on separate page, after writing Question Number.

1. Discuss the strategies for adopting 'climate resilient agriculture' in India.
2. Write an account on the role of 'Remote sensing & GIS' in natural resource management.
3. Briefly mention the recent international initiatives for preventing land degradation.
4. Suggest five innovative strategies for converting Indian cities as smart and clean cities.
5. Discuss the importance of sustainable development for emerging economies.
6. Write a short note on ISO 14000 series.
7. Discuss the impact of climate change on human health.
8. Write a short note on the trend of air pollution in Indian cities.
9. Briefly mention the national strategies for managing natural disasters in India.
10. Write a short note on arsenic contamination of aquatic resources in India.

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FOR ROUGH WORK

