1999

ZOOLEGY

Paper 1

Time: 3 Hours

Maximum Marks: 300

INSTRUCTIONS

Each question is printed both in English and in Kannada.

Answers must be written in the medium specified (English or Kannada) in the Admission Ticket issued to you, which must be stated clearly on the cover of the answer book in the space provided for this purpose. No credit will be given for the answers written in a medium other than that specified in the Admission Ticket.

Candidates should attempt questions 1 and 5 which are compulsory, and any three of the remaining questions, selecting at least one question from each Section.

Illustrate your answers with suitable diagrams wherever necessary.

All questions carry equal marks.

(Turn over)
SECTION A

1. Write concise accounts of any three of the following in about 200 words each:
   
   (a) Nutrition in Protozoa
   
   (b) Retrogressive metamorphosis
   
   (c) Beneficial insects
   
   (d) Origin of Amphibia and affinities of Apodans

2. Discuss Parasitic Protozoans in relation to human health.

3. Write an essay on the evolution of Elasmobranchs with a note on their adaptive radiation.

4. Give an account on the flight adaptations in birds with a comment on Ratitae.
1. "ಕುರಿತ್ತುಳು" ಎಂದು ಹೇಳುವ ಲಕ್ಷಣವಿಡುಗಳು ಮೂಲಕ ರೇಳಾಸನುವ ಶಾಸ್ತ್ರೀಯ ವಿಜ್ಞಾನ ಪ್ರತ್ಯೇಕವಾಗಿ ಹಿಂದುಗಳು ಸ್ವಲ್ಪ ಹಾಗೂ ಶಾಸ್ತ್ರೀಯ ಮೂಲಕ ಹಿಂದುಗಳು.

   (a) ನೆಲೆದಲ್ಲಿರುವ ಜೀವಿತಾಧಿಕ್ಯ
   (b) ಮುಂಚೂರುವ ಆಹಾರ
   (c) ಸುತ್ತುಪಡಿಯುವ ವಸ್ತುಗಳು
   (d) ಶರದಿಸಿರುವ ರೋಗಗಳು

2. ಹೀಗೆ ಪರವಾನಗಾಗಿ ರೇಳಾಸನುವ ಶಾಸ್ತ್ರೀಯವಾಗಿ ಹಿಂದುಗಳು ಮೂಲಕ ಹಿಂದುಗಳು.

3. "ಪ್ರತ್ಯಕ್ಷ ರೇಳಾಸನುವ" ಉದಾಹರಣೆಗಳು ಮತ್ತು ಹೊಂದಿದ್ದ ರೇಳಾಸನುವ ವಿಧಾನಗಳು, ಅವಗಳು ಅಧಿಕರ್ಣಪಡೆತ್ತು ಪ್ರತ್ಯಕ್ಷ (Adaptive radiation) ಮೂಲಕ ಹಿಂದುಗಳು ರುಚಿಸುತ್ತಾರೆ.

4. ಸಾಧಾರಣವಾಗಿ "ಪ್ರತ್ಯಕ್ಷ ರೇಳಾಸನುವ" ವಿಧಾನಗಳು ಮೂಲಕ ಹಿಂದುಗಳು ಗೋಲ ಅಥವಾ ಅಧಿಕರ್ಣಪಡೆತ್ತು ರೇಳಾಸನುವ ವಿಧಾನಗಳು ಮೂಲಕ ಹಿಂದುಗಳು.
SECTION B

5. Write brief accounts of any three of the following in about 200 words each:

(a) Ecological succession with a suitable example

(b) Biological clock and genetic regulations

(c) Types of sampling methods

(d) Induced breeding

6. Describe the sources of various air pollutants and their harmful effects on human health.

7. Write an essay on the life cycles of any two beneficial insects with a note on their economic importance.

8. Obtain regression equations from the following data:

<table>
<thead>
<tr>
<th>X</th>
<th>6</th>
<th>2</th>
<th>10</th>
<th>4</th>
<th>8</th>
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<tr>
<td>Y</td>
<td>9</td>
<td>11</td>
<td>5</td>
<td>8</td>
<td>7</td>
</tr>
</tbody>
</table>
5. កុមារ អាហារអាចនឹងអន្តរជាតិ ក្នុង ក្រោះ ១០០ នាក់ សេដ្ឋកិច្ច; ទំនួលសុខ
បារមាធ ២០០ ម៉ោងមួយ ដែលមានជូន៖
(1) សុខភាព សម្រាប់ក្នុង ស្រុក សេដ្ឋកិច្ចការណ៍
(2) អត្ថប្រយោជន៍ សម្រាប់ សង្គម អង្គកុមារ
(3) រួមមាន ១៣ (Sampling) ដំណើរ ការមក
(4) តម្លៃ ការជាប្រសើរ

6. រួមមាន ១៣ (Sampling) ដំណើរការមក, សម្រាប់ រៀងរាល់ ឬមាន ទូទៅ
អត្ថប្រយោជន៍ អង្គកុមារ វិទ្យាសាស្ត្រ, អំពី
ការផ្តើម៖

7. សម្រាប់ការអនុវត្ត ក្នុង រៀងរាល់ ចុងក្រោយ សង្គាត់កុមារ ២០ រៀង ក្នុង 
ស្រុក មានទំហំ សភាពកម្មប្រការ, ដែល មាន ស្រុក មកនេះ

8. ការអនុវត្តន៍ ការគុណភាព វិទ្យាសាស្ត្រ (Regression Equations:

<table>
<thead>
<tr>
<th>x</th>
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Candidates should attempt questions 1 and 5 which are compulsory, and any three of the remaining questions, selecting at least one question from each Section.

Illustrate your answers with suitable diagrams wherever necessary.

All questions carry equal marks.
SECTION A

1. Distinguish between any three of the following (each answer must be written in about 200 words):
   
   (a) Klinefelter's syndrome and Sickle cell anaemia
   
   (b) Allopatric and Sympatric speciation
   
   (c) m-RNA and t-RNA
   
   (d) Ribosomes and Polysomes

2. Explain multiple allele inheritance in Man.

3. Write an account of the various geological eras and their significance.

4. Write notes on the following:
   
   (a) Polytene chromosomes
   
   (b) Isolation mechanisms in animals
   
   (c) Insular fauna
   
   (d) Cytoplasmic inheritance
(3)

វិស័យ A

1. កន្លែងដែលមានប្រតិបន្តការជួសជុល និងការបែងច្ចេវ ដោយរូបរាង គឺប្រមូលស្ថិតនៅក្នុង៧០០ រយៈពេល ២០០ ម៉ោង។

(១) មានប្រតិបត្តិការបង្កើតប្រមូល

(២) មានប្រតិបត្តិការបង្កើតវីន៍

(៣) មានប្រតិបត្តិការបង្កើតបរិសិន

(៤) មានRNA និងmRNA

(៥) មានតម្រូវការបង្កើតបរិសិន

2. មានប្រតិបត្តិការបង្កើតវីន៍ និងតម្រូវការបង្កើតមិនបាន។

3. មានប្រតិបត្តិការជួសជុលដ៏មាប់សកល (Geological History) ដ៏សម័យយឺតបាន។

4. គិតជាគឺមានរូបរាងដូចខាងក្រោម:

(១) រក្សាស្ថានីយ៍ប្រកបដោយ

(២) ធាតុសិទ្ធិអនុវត្តមាប់ (solution mechanisms)

(៣) ទីផ្សារដូចគ្នា

(៤) មានប្រតិបត្តិការបង្កើតមិនបាន។
SECTION B

5. Distinguish between any three of the following (each answer must be written in about 200 words):
   
   (a) Poly-unsaturated fatty acids and Saturated fatty acids
   
   (b) Bohr effect and Hamburger effect
   
   (c) Adrenal cortex and Adrenal medulla
   
   (d) Organogenesis and Carcinogenesis

6. Describe the mechanism of skeletal muscle contraction with a note on energetics.

7. Write an account of modern nomenclature and classification of enzymes.

8. Write notes on the following:
   
   (a) Cyclic AMP in hormone action
   
   (b) Neurotransmitters and nervous disorders
   
   (c) Beta oxidation of fatty acids
   
   (d) Placental hormones
5. ಅಂಕೆ-ಅಂಕೆಗಡೆ ವಿಧಾನ ಅರ್ಪಣ ಮಾಡಿದರೆ ವೈದ್ಯರೂಪ ಸ್ಪುಟವಲಾಗಿದ್ದು ಶಾಸ್ತ್ರಾಧಿಕ್ಯದಲ್ಲಿ ಮೇಲೆ ಮಾಡಿದೆ:

(1) ಅಂಕೆ-ಅಂಕೆಗಡೆ ವಿಧಾನ ಅರ್ಪಣ ಮಾಡಿದರೆ ವೈದ್ಯರೂಪ ಸ್ಪುಟವಲಾಗಿದ್ದು ಶಾಸ್ತ್ರಾಧಿಕ್ಯದಲ್ಲಿ ಮೇಲೆ ಮಾಡಿದೆ.

(2) ಕುತ್ತುಂಡು ವಿಧಾನ ಅರ್ಪಣ ಮಾಡಿದರೆ ತನ್ನ ಪ್ರತಿಪಾದಕವಾಗಿದ್ದು ಶಾಸ್ತ್ರಾಧಿಕ್ಯದಲ್ಲಿ ಮೇಲೆ ಮಾಡಿದೆ.

(3) ವಿಧಾನವನ್ನು ಅರ್ಪಣ ಮಾಡಿದರೆ ಶಾಸ್ತ್ರಾಧಿಕ್ಯದಲ್ಲಿ ಮೇಲೆ ಮಾಡಿದೆ.

6. ದೊಡ್ಡ ಕೋಟೆಗಳಲ್ಲಿ ಪ್ರಾಮುಖ್ಯ ಮಾಡಿಗೆ ವೈದ್ಯಸದೃಶ್ಯ ಕೈಗೊಳ್ಳುವ ಸ್ಥಳವನ್ನು ಹೊರಡಿಸಿಕೊರೆ.

7. ಶಾಸ್ತ್ರ ಪ್ರಾಂಶಗಳಲ್ಲಿ (Enzymes) ಸ್ಂಬಂಧ ಪ್ರಮಾಣ ಮಾಡಿಕೊಳ್ಳುವ ಜೊತೆಗೆ ವೈದ್ಯಶಾಸ್ತ್ರ ಸ್ಥಳವನ್ನು ಹೊರಡಿಸಿಕೊರೆ.

8. ಶಾಸ್ತ್ರಾಧಿಕ್ಯದಲ್ಲಿ ಖಾದ್ಯ ಪ್ರೊಟೀನ್ ಮಾಡಿಕೊರೆ:

(1) ವೈದ್ಯಶಾಸ್ತ್ರ ಪ್ರಾಂಶಗಳು ಹೆಸರಿಸಿರುವ ಪ್ರೊಟೀನ್ 3.0 kcal (AMP)

(2) ಶಾಸ್ತ್ರ ಪ್ರಾಂಶಗಳು (Neurotransmitters) ಮಾಡಿ ಶೆನಾಗಿಸಿರುವ ಪ್ರೊಟೀನ್

(3) ಪ್ರಾಮುಖ್ಯ ಪ್ರಾಂಶಗಳು ತದುನಾದ ವೈದ್ಯಶಾಸ್ತ್ರ ಪ್ರಾಂಶಗಳು

(4) ಶಾಸ್ತ್ರ ಪ್ರಾಂಶಗಳು ತದುನಾದ ವೈದ್ಯಶಾಸ್ತ್ರ ಪ್ರಾಂಶಗಳು.