NATIONAL OPEN UNIVERSITY OF NIGERIA
University Village, Nnamdi Azikiwe Expressway, Plot 91, Cadastral Zone, Jabi, Abuja
Faculty of Agricultural Sciences
POP Questions 2021_2

Course Title: Analytical Technique for Animal Production II
Course Code: ANP 309
Credit Unit: 2
Total Score: 70 Marks
Time Allowed: 2 Hours
INSTRUCTION:
Answer Compulsory question 1 (30 marks) and any 2   questions (20 marks each)

Question one
a) Explain the Importance of Artificial Insemination (AI) to the livestock industry (6 marks)
b) Justify with reasons why AI has not enhanced livestock production in Nigeria (4 marks)
c) Give the meaning of the following feed protein quality evaluation methods
  i.   Protein efficiency ratio (PER) 3 marks
  ii.   Net protein utilization (NPU) 2 marks
d) Elaborate on four (4) methods of insemination with the stored semen (8 marks)
e) List four (4) isotopic elements that used in agriculture (2 marks)
f) Describe the Aspiration method of semen collection (5 marks)

Question two
a) Describe the massage method of semen collection (10 marks)
b) Chromatography is a technique for separation of proteins in the laboratory, mention seven
types that you know. (7 marks)
c) Mention any three (3) factors that affect viability of sperm cell during preservation (3 marks)

Question three
a) Mention five (5) types of semen extender (5 marks)
b) Mr Mensa has collected some semen from his cattle which he wants to preserve; explain to
him the attributes of an ideal medium for semen extension (7 marks)
c) Discuss the methods of long term storage of semen (8 marks)

Question four
a) Discuss the three (3) methods of in vivo digestibility. (11 marks)
b) Outline the advantages and limitations of in vivo trials (4 marks)
c) Mention seven (5) uses radioisotopes in agriculture (5 marks)