

AH-1474 CV19
M.A. (PREVIOUS)
Term End Examination, 2019-20
ECONOMICS
Paper-II
QUANTITATIVE METHODS

Time : Three Hours]

[Maximum Marks : 100]

नोट : किन्हीं पाँच प्रश्नों के उत्तर दीजिए। सभी प्रश्नों के अंक समान हैं।
Note : Attempt any five Question. All Question carry equal marks.

ઇકાઈ / Unit-I

1. रेखीय प्रक्रमन की अवधारणा को समझाए। रेखीय प्रक्रमन के महत्व तथा सीमाओं को विवेचना कीजिए।
Explain the concept of Linear Programming. Discuss the importance and limitations of Linear Programming.
2. खेल सिद्धांत क्या है ? 'शून्य राशि खेल' किन मान्यताओं पर आधारित है ? खेल सिद्धांत की सीमाएँ बताइए।
What is Game Theory? On which assumptions 'Zero Sum games' depend upon? Mention the limitations of game theory.
3. निम्न समंकों से बाउले का विषमता गुणक ज्ञात कीजिए –
11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 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1708, 1709, 1709, 1710, 1711, 1712, 1713, 1714, 1715, 1716, 1717, 1718, 1719, 1719, 1720, 1721, 1722, 1723, 1724, 1725, 1726, 1727, 1728, 1729, 1729, 1730, 1731, 1732, 1733, 1734, 1735, 1736, 1737, 1738, 1739, 1739, 1740, 1741, 1742, 1743, 1744, 1745, 1746, 1747, 1748, 1749, 1749, 1750, 1751, 1752, 1753, 1754, 1755, 1756, 1757, 1758, 1759, 1759, 1760, 1761, 1762, 1763, 1764, 1765, 1766, 1767, 1768, 1769, 1769, 1770, 1771, 1772, 1773, 1774, 1775, 1776, 1777, 1778, 1779, 1779, 1780, 1781, 1782, 1783, 1784, 1785, 1786, 1787, 1788, 1789, 1789, 1790, 1791, 1792, 1793, 1794, 1795, 1796, 1797, 1797, 1798, 1799, 1799, 1800, 1801, 1802, 1803, 1804, 1805, 1806, 1807, 1808, 1809, 1809, 1810, 1811, 1812, 1813, 1814, 1815, 1816, 1817, 1818, 1819, 1819, 1820, 1821, 1822, 1823, 1824, 1825, 1826, 1827, 1828, 1829, 1829, 1830, 1831, 1832, 1833, 1834, 1835, 1836, 1837, 1838, 1839, 1839, 1840, 1841, 1842, 1843, 1844, 1845, 1846, 1847, 1848, 1849, 1849, 1850, 1851, 1852, 1853, 1854, 1855, 1856, 1857, 1858, 1859, 1859, 1860, 1861, 1862, 1863, 1864, 1865, 1866, 1867, 1868, 1869, 1869, 1870, 1871, 1872, 1873, 1874, 1875, 1876, 1877, 1878, 1879, 1879, 1880, 1881, 1882, 1883, 1884, 1885, 1886, 1887, 1888, 1889, 1889, 1890, 1891, 1892, 1893, 1894, 1895, 1896, 1897, 1897, 1898, 1899, 1899, 1900, 1901, 1902, 1903, 1904, 1905, 1906, 1907, 1908, 1909, 1909, 1910, 1911, 1912, 1913, 1914, 1915, 1916, 1917, 1918, 1919, 1919, 1920, 1921, 1922, 1923, 1924, 1925, 1926, 1927, 1928, 1929, 1929, 1930, 1931, 1932, 1933, 1934, 1935, 1936, 1937, 1938, 1939, 1939, 1940, 1941, 1942, 1943, 1944, 1945, 1946, 1947, 1948, 1949, 1949, 1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1997, 1998, 1999, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2019, 2020, 2021, 202

Calculate Bowley's coefficient of skewness from the following data:

वर्ग Class	आवृत्ति Frequency
15-25	1
25-35	3
35-45	7
45-55	11
55-65	5
65-75	3

X	Y
60	68
62	60
65	62
70	80
72	85
48	40
53	52
73	62
65	60
82	81

6. निम्नलिखित में अज्ञात मूल्य ज्ञात कीजिए—

Find the missing values in the following table:

X	2.0	2.1	2.2	2.3	2.4	2.5	2.6
Y	135	?	111	100	?	82	74

7. निर्देशांक की उपयोगिता बताइए। एक श्रेष्ठ निर्देशांक द्वारा किन किन परीक्षणों की पूर्ति की आशा की जाती है ?

State the utility of Index Number. What tests by a good Index Number expected to satisfy?

8. किस कॉलेज में पढ़ने वाली छात्राओं तथा उनमें विवाहित छात्राओं का वितरण आयु के अनुसार नीचे दिया गया है। यह मानकर कि व्यस्कता 18 वें वर्ष में प्राप्त होती है, व्यस्यकता तथा विवाहित छात्राओं के बीच गुण संबंध ज्ञात कीजिए—

Following is the distribution of female students and married female students studying in a college, according to age. If maturity is attained after 18 years, calculate the coefficient of association between maturity and married female students.

आयु Age	छात्राओं की संख्या No. of female students	विवाहित छात्राओं की संख्या No. of married female students
16	300	240
17	240	168
18	200	120
19	120	60
20	100	36
21	60	14

9. (a) एक थैले में 5 सफेद, 4 काली, 3 पीली और 4 लाल गेंदें हैं। एक गेंद यादृच्छिक रूप से निकालने पर इसके काली या लाल होने की प्रायिकता क्या है ?

A bag contains 5 white, 4 black, 3 yellow and 4 red balls. What is the probability of getting a black or red ball at random in a single draw of one ball?

(b) एक पॉसें को दो बार फेंका जाता है—

A dice is thrown twice:

(i) पहली बार 6 तथा दूसरी बार विषम संख्या आने की प्रायिकता क्या है ?

(ii) दोनों बार 4 आने की प्रायिकता क्या है ?

(i) What is the probability that it falls with number 6 upwards in the first throw and with an odd number upwards in second throw?

(ii) What is the probability of getting 4 both times?

10. किन्हीं दों पर संक्षिप्त टिप्पणियाँ लिखिए—

Write short notes on: (any two)

(i) दैव न्यादर्श रीति (ii) स्तरित न्यादर्श रीति

(iii) सम्भाव्य विभ्रम (iv) सरल एवं संयुक्त घटनाएँ

(i) Random Sampling (ii) Stratified Sampling

(iii) Probable Error (iv) Simple and Compound even