

E 3229

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Reg. No.....

Name.....

B.B.A. DEGREE (C.B.C.S.S.) EXAMINATION, APRIL 2012

Second Semester

Complementary Course—STATISTICS FOR RESEARCH

Time : Three Hours

Maximum Weight : 25

Part A

Answer all questions.

Each bunch of four questions carries a weight of 1.

- I. 1 If the happening of one event influences the out come of other event than it is called _____.
- 2 Two coin tossed simultaneously. Probability of getting at least one heads is _____.
- 3 6C_4 is _____.
- 4 In random sampling _____ is selected.
- II. 5 The quantity _____ is known as standard error of correlation coefficient.
- 6 The standard error of estimation = $\sqrt{\frac{\sum (y_0 - y_e)^2}{n}}$ they $y_0 =$ _____ $y_e =$ _____.
- 7 For a small group of people most suited will be _____ sampling.
- 8 A _____ is a single number which is used as an estimate of the unknown population parameter.
- III. 9 Standard error of estimate is the _____ of the square of errors.
- 10 If the coefficient correlation is less than its probable error, than it is.
- 11 The χ^2 test is not applied if N is less than _____.
- 12 The quantity χ^2 describes the magnitude of _____ between theory and observation.
- IV. 13 χ^2 test is basically _____ test.
- 14 Degree of freedom is defined as _____.
- 15 In TWO way ANOVA, ssc is given by _____.
- 16 When observed frequency are given in shape of contingency table then the no. of degree of freedom is _____.

(4 × 1 = 4)

Turn over

Part B

*Answer any five questions.
Each question carries a weight of 1.*

- 17 Random sampling.
- 18 Degree of freedom.
- 19 Correlation.
- 20 Hypothesis.
- 21 Conditional probability.
- 22 Independent events.
- 23 F-rates.
- 24 Sampling frame.

(5 × 1 = 5)

Part C

*Answer any four questions.
Each question carries a weight of 2.*

- 25 A pair of dice is tossed twice. Find the probability of scoring 7 points (total)
 - (a) Once.
 - (b) At least once.
 - (c) Twice.
- 26 The odds that a book will be reviewed favourably by three independent critics are 5 to 2, 4 to 3, and 3 to 4. What is the probability that of the three reviews a majority will be favourable.
- 27 Elaborate steps in hypothesis testing.
- 28 Given $P(A) = \frac{1}{4}$, $P(B) = \frac{1}{3}$, and $P(A \cup B) = \frac{1}{2}$ calculate $P\left(\frac{A}{B}\right)$, $P\left(\frac{B}{A}\right)$, $P(A \cap B')$ and $P\left(\frac{A}{B'}\right)$.
- 29 A box contains 2 white and 4 black balls. Another box B contains 5 white and 7 black balls. A ball is transferred from box A to box B. Then a ball is drawn randomly from box B. Find the probability that it is white.
- 30 There are two groups subjects, one consist of 5 science and 3 engineering subjects and the other consist of 3 science and 5 engineering subjects. An unbiased die is tossed. If number 3 or 5 turns up a subject is selected at random from the second group. Find the probability that an engineering subjects is selected ultimately.

(4 × 2 = 8)

Part D

*Answer any two questions.
Each question carries weight 4.*

- 31 (a) State Bay theorem.
(b) Three machine M_1 , M_2 , M_3 produces identical items of there respective output 5%, 4%, 3%, of items are faulty. On a certain day M_1 produces 25% of the total o/p, M_2 produces 30% and rest by M_3 . An item selected randomly is found to be faulty. What are chances that it was produced by machine of highest output.
- 32 Following table gives data regarding election of candidate to an office

Attitude towards election	Economic status		
	Rich	Poor	Total
Favourable	50	155	205
Not favourable	90	110	200
Total	140	165	405

Is the attitude towards election is influenced by election status of worker.

- 33 The time taken by a worker is performing a job by Method 1 and Method 2 is given below

Method 1	20	16	26	25	23	
Method 2	28	33	42	35	52	34

Does the data show that the variance of time distribution by the two method do not differ significantly.

(2 × 4 = 8)