BOARD OF INTERMEDIATE EDUCATION, A.P, HYDERABAD

MODEL QUESTION PAPER BRIDGE COURSE

MATHEMATICS, PAPER-II (W.E.F.2013-14)

Time: 3 Hours
Max.marks:75

Note: This Question Paper contains of two sections A and B.

SECTION-A **10** X **3 =30**

Note: (i) Short Answer Type Questions.
(ii) Attempt **All** Questions.
(iii) Each Question carries **Three** marks.

1. Resolve $\frac{5x+6}{(2+x)(1-x)}$ into partial fractions.

2. Find the sum of the infinite series $1+\frac{1}{2!}+\frac{1}{4!}+\frac{1}{6!}+\ldots\ldots\ldots$

3. Find the equation of the circle whose centre is $(-1,2)$ and which passes through (5, 6).

4. If the circle $x^2+y^2+ax+by-12=0$ has the centre at (2, 3) then find a,b and the radius of the circle.

5. Find the area of the triangle form by the normal at $(3,-4)$ to the circle $x^2+y^2-22x-4y+25=0$ with co-ordinate axes.

6. The variance of 20 observations is 5. If each observation is multiplied by 2, then find the new variance of the resulting observations.

7. Find the mean deviation from the following discrete data: 6, 7, 10, 12, 13, 4, 12, 16.

8. Find $\int \cot^2 x\,dx$.

9. Evaluate $\int_0^2 \sqrt{4-x^2}\,dx$.

10. Find order and degree of the differential equation $\left[\frac{d^3y}{dx^3}\right]^2-3\left[\frac{dy}{dx}\right]^2-e^x=4$.

SECTION-B 3 X 15 = 45

Note: (i) Long Answer Type Questions.
(ii) Attempt any **Three** Questions.
(iii) Each Question carries **Fifteen** marks.

11. (a) Resolve $\frac{3x-18}{x^3(x+3)}$ into partial fractions. (8)

(b) Resolve $\frac{x^4}{(x-1)(x-2)}$ into partial fractions. (7)

12. (a) Find the equation of the circle which passes through (4, 1), (6, 5) and having the centre on $4x+y-16=0$. (8)

(b) Find the co-ordinates of the vertex, focus and the equation of the directrix and axes of parabola $y^2-x+4y+5=0$. (7)

13. (a) Calculate the variance and standard deviation for the following distribution: (8)

Class	30 – 40	40 – 50	50 – 60	60 – 70	70 – 80	80 – 90	90 – 100
Frequency	3	7	12	15	8	3	2

(b) The arithmetic mean and standard deviation of a set of 9 items are 43 and 5 respectively. If an item of value 63 is added to that set, find the new mean and standard deviation of 10 item set given. (7)

14. (a) Find $\int \frac{dx}{3\cos x+4\sin x+6}$ (8)

(b) Evaluate $\int_{\pi/6}^{\pi/3} \frac{\sqrt{\sin x}}{\sqrt{\sin x}+\sqrt{\cos x}}dx$ (7)

15. (a) Evaluate $\int \frac{1}{a+b\cos x}dx$ (8)

(b) Evaluate $\int_0^{16} \frac{x^{1/4}}{1+x^{1/2}}dx$ (7)

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