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HSSC-(P-II)-A/2023

Paper Code	8	1	9	6

Roll No [redacted] to be filled in by the candidate

(For All Sessions)

Group-II

Time: 30 Minutes Marks : 20

Mathematics (Objective)

Note: Write Answers to the Questions on the objective answer sheet provided. Four possible answers A, B, C and D to each question are given. Which answer you consider correct, fill the corresponding circle A, B, C or D given in front of each question with Marker or Pen ink on the answer sheet provided.

1.1	Midpoint of $A(1,2)$ & $B(3,8)$ is:	(A)	$(2,5)$	(B)	$(4,10)$	(C)	$(2,6)$	(D)	$(2,8)$
2.	$(1,-3)$ is in the solution of _____.	(A)	$x+y\geq 1$	(B)	$x+y\leq 0$	(C)	$x+y=0$	(D)	$x-y=0$
3.	Centre of circle $x^2+y^2-6x+4y+13=0$	(A)	$(3,2)$	(B)	$(-3,2)$	(C)	$(3,-2)$	(D)	$(-3,-2)$
4.	Focus of parabola $x^2=4ay$ is:	(A)	$(-a,o)$	(B)	$(o,-a)$	(C)	(a,o)	(D)	(o,a)
5.	Eccentricity e for hyperbola is:	(A)	$e=1$	(B)	$e=0$	(C)	$e<1$	(D)	$e>0$
6.	Length of major axis of $\frac{x^2}{9}+\frac{y^2}{4}=1$	(A)	03	(B)	06	(C)	02	(D)	04
7.	Which one is not scalar quantity:	(A)	Work	(B)	Time	(C)	Magnetic field	(D)	Speed
8.	$\left[\underline{k}\ \underline{i}\ \underline{j}\right]$	(A)	2	(B)	0	(C)	1	(D)	-1
9.	$\lim_{x\to 2}\sqrt{x^3+1}-\sqrt{x^2+5}$	(A)	-1	(B)	0	(C)	2	(D)	-2
10.	Area of circle of unit radius is:	(A)	π	(B)	2π	(C)	π^2	(D)	$2\pi^2$
11.	$\frac{d}{dx}(3^x)=$ _____	(A)	$3^x lnx$	(B)	$3^x ln2$	(C)	$3^x ln3$	(D)	$x\,3^{x-1}$
12.	Lagrange used ____ notation for derivative.	(A)	$D\,f(x)$	(B)	$f^1(x)$	(C)	$\frac{d}{dx}f(x)$	(D)	$\dot{f}(x)$
13.	$\frac{d}{dx}\,cos7x =$ ----------.	(A)	$7\,Sin\,7x$	(B)	$-7\,Sin\,7x$	(C)	$7\,Cos\,7x$	(D)	$-7\,Cos\,7x$
14.	Minimum value of function $f(x)=x^2+2x-3$ is at $x=$__.	(A)	-3	(B)	-2	(C)	0	(D)	-1
15.	$\int\frac{1}{1+x^2}dx=$ _____.	(A)	$Sin^{-1}x+c$	(B)	$Cos^{-1}x+c$	(C)	$Tan^{-1}x+c$	(D)	$Cot^{-1}x+c$
16.	$\int\frac{1}{x^2}dx =$ ----------.	(A)	$-\frac{1}{x}+c$	(B)	$\frac{1}{x}+c$	(C)	$\frac{2}{x}+c$	(D)	$\frac{-2}{x}+c$
17.	Solution of $\frac{dy}{dx}=1$ *is*_____.	(A)	$y=x^2+c$	(B)	$y=e^x+c$	(C)	$y=lnx+c$	(D)	$y=x+c$
18.	$\int_0^1 3x^2dx=$ _____.	(A)	3	(B)	1	(C)	2	(D)	0
19.	Equation of line through origin with slope 2:	(A)	$2x-y=0$	(B)	$2x+y=0$	(C)	$x+2y=0$	(D)	$x-2y=0$
20.	Slope of line parallel to y-axis:	(A)	-1	(B)	0	(C)	∞	(D)	1