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# CLASS XII

General Instructions :-

1. Please check that this question paper contains 4 printed pages.
2. All questions are compulsory.
3. The question paper consists of 29 questions divided into three sections A, B and C. Section A contains 10 questions of 1 marks each, Section B is of 12 questions of 4 marks each and Section C is of 7 questions of 6 marks each.
4. Write the serial number of the question before attempting it.
5. If you wish to answer any question already answered, cancel the previous answer.
6. In questions where internal choices is provided. You must attempt only one choice.

## *MATHEMATICS* *CLASS XII*

## PART – A

| | |
|---|---|
| **Q.1** | Evaluate: $\int \{1+2\tan x(\tan x+\sec x)\}^{1/2}\,dx$. |
| **Q.2** | Evaluate $\int \sqrt{4x^2+9}\,dx$. |
| **Q.3** | Evaluate : $\int \dfrac{dx}{\sin^2 x\cos^2 x}$. |
| **Q.4** | Evaluate : $\int \dfrac{e^{-x}}{16+9e^{-2x}}dx$. |
| **Q.5** | Evaluate : $\int \dfrac{dx}{x\log x\log(\log x)}$. |
| **Q.6** | Evaluate : $\int \dfrac{\sin 5x}{\sin 2x\sin 3x}dx$. |
| **Q.7** | Evaluate : $\int 2^{2^{2^x}}\,2^{2^x}\,2^x\,dx$. |
| **Q.8** | Evaluate : $\int x^2\,\dfrac{\tan^{-1}x^3}{1+x^6}dx$. |
| **Q.9** | Evaluate : $\int \dfrac{\sin 2x}{1+\cos^2 x}dx$. |
| **Q.10** | Evaluate: $\int \sec^p x\tan x\,dx$. |

## PART – B

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|---|---|
| **Q.11** | Evaluate : $\int \dfrac{1}{4+5\cos x}dx$ .<br>OR<br>Evaluate : $\int \dfrac{3\cos x+2\sin x}{4\cos x+3\sin x}dx$. |
| **Q.12** | Evaluate : $\int \dfrac{1}{2e^{2x}+3e^x+1}dx$.<br>OR<br>Evaluate : $\int \dfrac{dx}{x[(\log x)^2+4\log x-1]}$. |
| **Q.13** | Evaluate : $\int \sqrt{\dfrac{a+x}{a-x}}\,dx$ . |
| **Q.14** | Evaluate: $\int \tan^4 x\,dx$. |

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|---|---|
| **Q.15** | Evaluate : $\int \frac{\sin^6 x+\cos^6 x}{\sin^2 x\cos^2 x}dx$ . |
| **Q.16** | Evaluate: $\int \frac{\sin 2x}{\sin^4 x+\cos^4 x}dx$ . |
| **Q.17** | Evaluate: $\int \frac{(x^4-x)^{1/4}}{x^5}dx$ .<br>OR<br>Evaluate: $\int \sqrt{e^x-1}dx$ . |
| **Q.18** | Evaluate: $\int \frac{dx}{\sin(x-a)\sin(x-b)}$ . |
| **Q.19** | Evaluate: $\int \frac{\sqrt{(x^2-a^2)}}{x}dx$ . |
| **Q.20** | Evaluate : $\int \frac{1}{x^2(x^4+1)^{3/4}}dx$ .<br>OR<br>Evaluate: $\int \frac{dx}{(x+1)^{1/3}+(x+1)^{1/2}}$ . |
| **Q.21** | Evaluate: $\int \frac{dx}{(\sin x-2\cos x)(2\sin x+\cos x)}$ . |
| **Q.22** | Evaluate: $\int \frac{dx}{x(x^n+1)}$ . |
| | **PART – C** |
| **Q.23** | Evaluate: $\int \frac{x^2}{x^4+x^2+16}dx$ . |
| **Q.24** | Evaluate : $\int \sqrt{\tan x}dx$ .<br>OR |

| | |
|---|---|
| | Evaluate : $\int (x+1)\sqrt{1-x-x^2}dx$ . |
| **Q.25** | Evaluate : $\int \frac{2\sin x-3\cos x+1}{3\sin x+4\cos x+5}dx$ . |
| **Q.26** | (i) Evaluate : $\int \frac{\sin x+\cos x}{\sqrt{\sin x.\cos x}}dx$ .<br>(ii) Evaluate : $\int \cos 2x\cos 4x\cos 6xdx$. |
| **Q.27** | Evaluate : $\int \sqrt{\left(\frac{1-\sqrt{x}}{1+\sqrt{x}}\right)}dx$ .<br>**OR**<br>Evaluate : $\int \sqrt{\frac{\cos x-\cos^3 x}{1-\cos^3 x}}dx$ . |
| **Q.28** | (i)Evaluate : $\int \frac{\sqrt{\tan x}}{\sin x\cos x}dx$ .<br>(ii) Evaluate : $\int \frac{2\sin 2x-\cos x}{6-\cos^2 x-4\sin x}dx$. |
| **Q.29** | (i)Evaluate: $\int \frac{dx}{\sqrt{\sin^3 x\sin(x+\alpha)}}$ .<br>(ii)Evaluate : $\int \sqrt{\frac{\sin(x-\alpha)}{\sin(x+\alpha)}}dx$. |
| | _____x_____ |
| | ***"Hard working is only the investment that never fails"*** |