Reg.No. | | | | | | | | | | | |

D.K.M.COLLEGE FOR WOMEN (AUTONOMOUS), VELLORE-1

SEMESTER EXAMINATIONS

APRIL – 2019 **15SMA4A**

SKILL BASED SUBJECT – II: FOURIER SERIES

Time : 2 Hrs **Max. Marks : 50**

SECTION-A (10 x 2 = 20)

Answer ALL the questions.

1. *State Dirichlet's Conditions.*
2. *State Euler's formulae for Fourier coefficients.*
3. *Define odd and even functions with an example in each.*
4. *Write the Fourier coefficients in the interval* $(-l, l)$.
5. *Explain change of interval in* $(0,2l)$.
6. *Write down the Fourier expansion in* $(-\pi, \pi)$.
7. *Write down Half-range sine series.*
8. *Write down Half-range cosine series.*
9. *State and prove Parseval's Identity.*
10. *State few applications of Fourier series.*

SECTION-B (3x 10 = 30)

Answer any THREE of the following questions.

11. *Obtain Fourier series for* $f(x) = \frac{1}{2}(\pi - x)$ *in* $0 < x < 2\pi$.
12. *Obtain Fourier series for* $f(x) = x^2$ *in* $-\pi \leq x \leq \pi$.
13. *Find the Fourier series for* $f(x) = \begin{cases} -x, & -1 \leq x \leq 0 \\ x, & 0 \leq x \leq 1 \end{cases}$
14. *Find the Half-range sine and cosine series for* $f(x) = x$ *in* $(0, \pi)$.
15. *Explain the Typical wave forms with suitable examples.*

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