

## REFERENCES

- [1] Bose, R.C., Shimamoto, T.: Classification and analysis of partially balanced incomplete block designs with two associate classes, *J. Am. Stat. Assoc.* **47**, 151-184 (1952).
- [2] Fu, H.L., Rodger, C.A.: Group divisible designs with two associate classes  $n = 2$  or  $m = 2$ , *J. Combin. Theory Ser. A* **83**, 94-117 (1998).
- [3] Fu, H.L., Rodger, C.A., Sarvate, D.G.: The existence of group divisible designs with first and second associates, having block size 3, *Ars Combin.* **54**, 33-50 (2000).
- [4] Lindner, C.C., Rodger, C.A.: *Design Theory*, CRC Press, Boca Raton, 1997.
- [5] Pabhapote, N.: Group divisible designs with two associate classes and with two unequal groups, *Int. J. Pure Appl. Math.* **81**, 191-198 (2012).
- [6] Pabhapote, N., Punnim, N.: Group divisible designs with two associate classes and  $\lambda_2 = 1$ , *Int. J. Math. Math. Sci.* **2011**. Article ID 148580, 10 pages (2011).
- [7] Rees, R.: Uniformly resolvable pairwise balanced designs with block sizes two and three, *J. Combin. Theory Ser. A* **45**(4), 207-225 (1987).
- [8] Uyyasathian, C., Lapchinda, W.: Group divisible designs with two associate classes and  $\lambda_2 = 2$ , *Int. J. Pure Appl. Math.* **55**(4), 561-568 (2009).
- [9] Uyyasathian, C., Pabhapote, N.: Group divisible designs with two associate classes and  $\lambda_2 = 4$ , *Int. J. Pure Appl. Math.* **73**(3) , 289-298 (2011).
- [10] West, D.B.: *Introduction to graph theory*, Prentice Hall, New York, 2001.

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