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About G -rings

Comment.Math.Univ.Carolin. 58,1 (2017) 13 –18.

Abstract: In this paper, we are concerned with G -rings. We generalize the Kaplansky's theorem to rings with zero-divisors. Also, we assert that if $R \subseteq T$ is a ring extension such that $mT \subseteq R$ for some regular element m of T , then T is a G -ring if and only if so is R . Also, we examine the transfer of the G -ring property to trivial ring extensions. Finally, we conclude the paper with illustrative examples discussing the utility and limits of our results.

Keywords: G -ring; pullback; trivial extension

AMS Subject Classification: 13D05, 13D02

REFERENCES

- [1] Adams J.C., *Rings with a finitely generated total quotient ring*, Canad. Math. Bull. **17** (1974), 1–4.
- [2] Bakkari C., Kabbaj S., Mahdou N., *Trivial extensions defined by Prüfer conditions*, J. Pure Appl. Algebra **214** (2010), no. 1, 53–60.
- [3] Bourbaki N., *Commutative Algebra*, Addison-Wesley, Reading, 1972.
- [4] Brewer J.W., Rutter E.A., *$D + M$ constructions with general overrings*, Michigan Math. J. **23** (1976), 33–42.
- [5] Cahen P.J., *Couple d'anneaux partageant un idéal*, Arch. Math. **51** (1988), 505–514.
- [6] Dobbs D.E., *G -Domain pairs*, Internat. J. Commutative Rings **1** (2002), no. 2, 71–75.
- [7] Dobbs D.E., Ishikawa T., *On seminormal underrings*, Tokyo J. Math. **10** (1987), 157–159.
- [8] Dobbs D.E., Papick I., *When is $D + M$ coherent?*, Proc. Amer. Math. Soc. **56** (1976), 51–54.
- [9] Fontana M., *Topologically defined classes of commutative rings*, Ann. Mat. Pura Appl. **123** (1980), 331–355.
- [10] Gilmer R., *The pseudo-radical of a commutative ring*, Pacific J. Math. **19** (1966), 275–284.
- [11] Huckaba J.A., *Commutative Rings with Zero Divisors*, Marcel Dekker, New York-Basel, 1988.
- [12] Kaplansky I., *Commutative Rings*, revised edition, University of Chicago Press, Chicago, 1974.
- [13] Kabbaj S., Mahdou N., *Trivial extensions of local rings and a conjecture of Costa*, Lecture Notes in Pure and Appl. Math., 231, Dekker, New York, 2003, pp.301–311.
- [14] Kabbaj S., Mahdou N., *Trivial extensions defined by coherent-like conditions*, Comm. Algebra **32** (2004), no. 10, 3937–3953.
- [15] Mahdou N., Mimouni A., Moutui M.A., *On almost valuation and almost Bézout rings*, Comm. Algebra **43** (2015), no. 1, 297–308.