NEW TRENDS IN RINGS AND MODULES I
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ON UNIT GROUP OF INTEGRAL GROUP RING $\mathbb{Z}(S_3 \times C_3)$

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Abstract. In this note, we obtain a split extension form of unit group in integral group of the direct product group

$$S_3 \times C_3 =< a, b, x : a^3 = b^2 = x^3 = 1, bab^{-1} = a^{-1}, ax = xa, bx = xb >$$

In this characterization, we extend some group homomorphisms to ideals of integral group rings $\mathbb{Z}(S_3 \times C_3)$ linearly and show that the torsion free normal complement of the unit group in $\mathbb{Z}S_3$ is a direct summand (as a $\mathbb{Z}$-module) of this extension. Notations mostly follow [7].

References

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