Question Number	Scheme	Marks
1 (a)	You would assign an average rank between the tied ranks	B1
		(1)
(b)	Rank for total tournaments 1 3 4 6 8 9 2 5 10 7	M1
	$\sum d^2 = 0+1+1+4+9+9+25+9+1+9$ [= 68]	M1
	$r_s = 1-\dfrac{6\times'68'}{10\left(10^2-1\right)}$	dM1
	= 0.5878… awrt 0.588	A1
		(4)
(c)	$H_0: \rho = 0$, $H_1: \rho > 0$	B1
	Critical Value = 0.5636 or CR … 0.5636	B1
	Reject H_0 or significant or lies in the critical region	dM1
	There is sufficient evidence of a positive correlation between rank and total tournaments won	A1
		(4)
(d)	2.5% and r_s = 0.6485 or CR … 0.6485	B1
		(1)

	Notes	Total 10
(a)	**B1**	for an appropriate explanation of how to deal with tied ranks. Ignore any comments regarding PMCC Do not allow add 0.5 to both ranks
(b)	**M1**	attempt to rank total tournaments (at least four correct) Condone reversed ranks
	M1	finding the difference between players rank and each of their total tournaments ranks and evaluating $\sum d^2$ May be implied by 68
	dM1	dependent on 1st M1. Using $1-\dfrac{6\sum d^2}{10(99)}$ with their $\sum d^2$ (you will need to check their $\sum d^2$ if no value shown)
	A1	awrt 0.588 Allow $\frac{97}{165}$
(c)	**B1**	both hypotheses correct. Must be in terms of ρ. Must be attached to H_0 and H_1 If r_s is negative in part (b) then allow $H_1: \rho < 0$
	B1	critical value of 0.5636 If r_s is negative in part (b) then allow –0.5636
	dM1	dependent on 2nd B1. A correct statement ft their part (b) and their CV– no context needed but do not allow contradicting non contextual comments. This may be implied by a correct contextual conclusion.
	A1	correct conclusion which is rejecting H_0, which must mention **rank** and **total tournaments**. No hypotheses is A0.
		NB If they have used $H_1: \rho < 0$ then the maximum they can score is B1B1dM1A0
(d)	**B1**	for 2.5% and a correct critical value of 0.6485