

The descriptions of the models  $\mathcal{N}15$ ,  $\mathcal{N}17$ , and  $\mathcal{N}36(\beta)$  have been revised. The revisions are described below:

1. In the description of  $\mathcal{N}15$  replace

$\mathcal{N}15$ : Brunner/Howard Model I.  $A = \{a_{i,\alpha} : i \in \omega \wedge \alpha \in \omega_1\}$ . Let  $\Gamma$  be the group of all even permutations on  $\omega$ .  $\mathcal{G} = \{g : (\forall \alpha \in \omega_1)(\exists \gamma \in \Gamma)(\forall i \in \omega)g(a_{i,\alpha}) = a_{\gamma(i),\alpha}\}$ .  $S$  is the set of all countable subsets of  $A$ .

with

$\mathcal{N}15$ : Brunner/Howard Model I.  $A = \{a_{i,\alpha} : i \in \omega \wedge \alpha \in \omega_1\}$ . Let  $\Gamma$  be the group of all even permutations on  $\omega$ .  $\mathcal{G} = \{g : (\forall \alpha \in \omega_1)(\exists \gamma \in \Gamma)(\forall i \in \omega)g(a_{i,\alpha}) = a_{\gamma(i),\alpha}$  and for all but finitely many  $\alpha \in \omega_1, (\forall i \in \omega)(g(a_{i,\alpha}) = a_{i,\alpha})\}$ .  $S$  is the set of all countable subsets of  $A$ . This is the model of proposition 3.4 in Brunner/Howard [1992].

2. In the description of  $\mathcal{N}17$  replace the entire description of the model with

$\mathcal{N}17$ : Brunner/Howard Model II.  $A = \{a_{\alpha,i} : \alpha \in \omega_1 \wedge i \in \omega\}$ . Let  $\Gamma$  be the group of all permutations on  $\omega_1$ .  $\mathcal{G} = \{g : (\forall i \in \omega)(\exists \gamma \in \Gamma)(\forall \alpha \in \omega_1)g(a_{\alpha,i}) = a_{\gamma(\alpha),i}$  and for all but finitely many  $i \in \omega, (\forall \alpha \in \omega_1)g(a_{\alpha,i}) = a_{\alpha,i}\}$ .  $S = \{F \subseteq A : \{i : (\exists \alpha \in \omega_1)g_{\alpha,i} \in F\}$  is finite  $\}$ . This is the model of proposition 3.1 in Brunner/Howard [1992] with  $\kappa = \aleph_0$ . In this model, the union of a denumerable number of denumerable sets is denumerable (31 is true), but  $C(\aleph_0, \aleph_1)$  (28) is false. If we assume that  $2^{\aleph_0} = \aleph_1$  in the ground model, then  $C(\aleph_0, 2^{\aleph_0})$  is also false.  $UT(\aleph_0, \aleph_1, \aleph_1)$  (27) (which implies  $C(\aleph_0, \aleph_1)$ ) is also false. Form 23  $((\forall \alpha)UT(\aleph_\alpha, \aleph_\alpha, \aleph_\alpha))$  is false because 23 implies 27. Since 231  $(UT(WO, WO, WO))$  implies 23 in every FM model, it follows that 231 is false.

$\mathcal{N}17 \models 31, 37, 91, 130, 191, 273, 305, 309, 361, 363, 368,$  and  $369$ , but  $15, 27, 28, 62, 106, 131, 163, 165, 231, 323,$  and  $344$  are false. References Brunner/Howard [1992], notes 2(3, 5, and 6), 18 and 120(30 49, 55, and 56).

3. In the description of  $\mathcal{N}36(\beta)$  replace

$\mathcal{N}36(\beta)$ : Brunner/Howard Model III. This model is a modification of  $\mathcal{N}15$ .  $A = \{a_{i,\alpha} : i \in \omega \wedge \alpha \in \omega_{\beta+1}\}$ . Let  $\Gamma$  be the group of all permutations on  $\omega$ . Then  $\mathcal{G} = \{g : (\exists \gamma \in \Gamma)(\forall i \in \omega)(\forall \alpha \in \omega_{\beta+1})g(a_{i,\alpha}) = a_{\gamma(i),\alpha}\}$ .  $S$  is the set of all subsets of  $A$  of cardinality at most  $\aleph_\beta$ .

with

$\mathcal{N}36(\beta)$ : Brunner/Howard Model III. This model is a modification of  $\mathcal{N}15$ .  $A = \{a_{i,\alpha} : i \in \omega \wedge \alpha \in \omega_{\beta+1}\}$ . Let  $\Gamma$  be the group of all permutations on  $\omega$ . Then  $\mathcal{G} = \{g : (\forall \alpha \in \omega_{\beta+1})(\exists \gamma \in \Gamma)(\forall i \in \omega)g(a_{i,\alpha}) = a_{\gamma(i),\alpha}$  and for all but finitely many  $\alpha \in \omega_{\beta+1}, (\forall i \in \omega)g(a_{i,\alpha}) = a_{i,\alpha}\}$ .  $S$  is the set of all subsets of  $A$  of cardinality at most  $\aleph_\beta$ . This is the model of proposition 3.3 in Brunner/Howard [1992].

4. In the last sentence of the description of  $\mathcal{N}36(\beta)$  replace the word “if” with the word “is”.