

List of Symbols

a) non alphabetical

$[X, Y]$	set of morphisms $X \longrightarrow Y$	
$[A, B]$	category of functors $A \longrightarrow B$	
$\underline{A}(\alpha)$	full subcategory of a category \underline{A} consisting of all α -presentable objects	2.8
$\underline{\tilde{A}}(\alpha)$	full subcategory of a category \underline{A} consisting of all α -generated objects.	2.8
$\bar{\Sigma}$	closure of a class Σ of morphisms	
$\underline{A}_{\Sigma, T}$	full subcategory of a category \underline{A} consisting of all objects $X \in \underline{A}$ such that $T(\sigma, X)$ is an isomorphism for every $\sigma \in \Sigma$, where $T : \underline{B} \times \underline{A} \longrightarrow \underline{C}$ is a given bifunctor and Σ a class of morphisms in \underline{B}	6.
$\underline{A}_{\mathbb{G}}$	category of all \mathbb{G} -coalgebras in \underline{A} for some cotriple \mathbb{G}	4.10
$\underline{A}^{\mathbb{T}}$	category of all \mathbb{T} -algebras in \underline{A} for some triple \mathbb{T}	4.13
$\underline{\Lambda}^{\underline{A}}$	category of left Λ -objects in \underline{A}	6.4

b) alphabetical

$\text{Adj}(\underline{A}, \underline{B})$	category of all functors $\underline{A} \longrightarrow \underline{B}$ admitting a right adjoint	6.18
$\mathcal{A}\text{-Mod}_R$	full subcategory of Mod_R consisting of all R -modules A such that every cyclic submodule (a) is a quotient of R/\mathcal{A}^n for some $n \geq 1$ depending on a	6.25
$\text{Bialg}_{M, R}(\underline{A})$	category of bialgebras in \underline{A} with respect to operations M and relations R	3.1
$\underline{\Lambda}\text{-Bialg}$	category of bialgebras over a commutative ring Λ	4.4
Bimod_H	category of bimodules over a bialgebra H	4.9

<u>Cat</u>	category of small categories	4.26
card(S)	cardinality of a set S	
Λ - <u>Coalg</u>	category of Λ -coalgebras over a commutative ring Λ	4.3
$C_{\Sigma}[\underline{U}, \underline{X}]$	full subcategory of $[\underline{U}, \underline{X}]$ consisting of all Σ -continuous functors	2.10
$Cc_{\Sigma}[\underline{U}, \underline{X}]$	full subcategory of $[\underline{U}, \underline{X}]$ consisting of all Σ -cocontinuous functors	2.10
Cocont $[\underline{A}, \underline{B}]$	category of all cocontinuous functors $\underline{A} \rightarrow \underline{B}$	
<u>Comod</u> _C	category of right comodules over a coalgebra C	4.8
<u>Comp</u>	category of compact spaces	4.1
$Csh_{\tau}[\underline{U}, \underline{X}]$	category of all \underline{X} -valued τ -cosheaves on a site (\underline{U}, τ)	6.17
$\underline{D}_{A, f}$	category of factorizations $U \xrightarrow{g_i} U_i \xrightarrow{f_i} A$ of a morphism $U \xrightarrow{f} A$	3.13
$\underline{D}(A, M)$	category of bialgebras over a pre-bialgebra (A, M) whose underlying object in \underline{A} is γ -presentable	3.17
$\underline{D}(A, M, R)$	category of bialgebras over a bialgebra (A, M, R) whose underlying object in \underline{A} is γ -presentable	3.18
Desc (\mathcal{F}_{S_0})	category of descent data with respect to a fibration \mathcal{F} and a morphism $\alpha : S_0 \rightarrow S$ in the base	4.14
$\epsilon(A)$	generation rank of an object A	2.2
$\epsilon(\underline{A})$	generation rank of a category \underline{A}	2.3
$\epsilon(F)$	generation rank of a functor F	2.1
\mathbb{F}	class of all functors which are domain or codomain of a given class of operations and relations	3.1
\mathbb{F}_c	subclass of all functors of \mathbb{F} which are the codomain of either an operation or a relation	3.1
\mathbb{F}_d	subclass of all functors of \mathbb{F} which are the domain of either an operation or a relation	3.1

\mathcal{F} \underline{X}	fibre over an object with respect to a fibration \mathcal{F}	4.14
$\mathcal{F}_{\underline{\Lambda}} \underline{X}$	full subcategory of $\underline{\Lambda} \underline{X}$ consisting of all uniquely \mathcal{F} -divisible objects for a filter \mathcal{F} of right ideals in $\underline{\Lambda}$	6.25
$\text{Hom}_{\underline{B}}(\underline{B}, \underline{E})$	category of sections with respect to a fibration $p : \underline{E} \rightarrow \underline{B}$	4.19
$\text{Homcart}_{\underline{B}}(\underline{B}, \underline{E})$	full subcategory of $\text{Hom}_{\underline{B}}(\underline{B}, \underline{E})$ consisting of all cartesian closed sections with respect to a fibration	4.19
$(\text{Mod}_{\underline{\Lambda}})_{\mathcal{F}}$	full subcategory of $\text{Mod}_{\underline{\Lambda}}$ consisting of all \mathcal{F} -closed ^S modules	6.25
$\pi(\underline{A})$	presentation rank of an object \underline{A}	2.2
$\pi(\underline{A})$	presentation rank of a category \underline{A}	2.3
$\pi(\underline{F})$	presentation rank of a functor \underline{F}	2.1
$\text{P-Bialg}_M(\underline{A})$	category of pre-bialgebras in \underline{A} with respect to M	3.1
$\text{rank}_{\Sigma}(\underline{T})$	least cardinal $\delta \geq \pi(\underline{A})$ such that for every $\sigma \in \Sigma$ and every $\pi(\underline{A})$ -presentable object $U \in \underline{A}$ the objects $\underline{T}(\underline{d}\sigma, U)$ and $\underline{T}(\underline{r}\sigma, U)$ are δ presentable	6.4
$\text{rank}_M(\underline{T})$	likewise	6.4

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